96
PLOT 26
17 - ⊙
21 - △
25 - ⊡
29 - ◇

CVAL TEST 96
MODEL XFY-1

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PAGE 43
REPORT CVAL 96
FIG. 4

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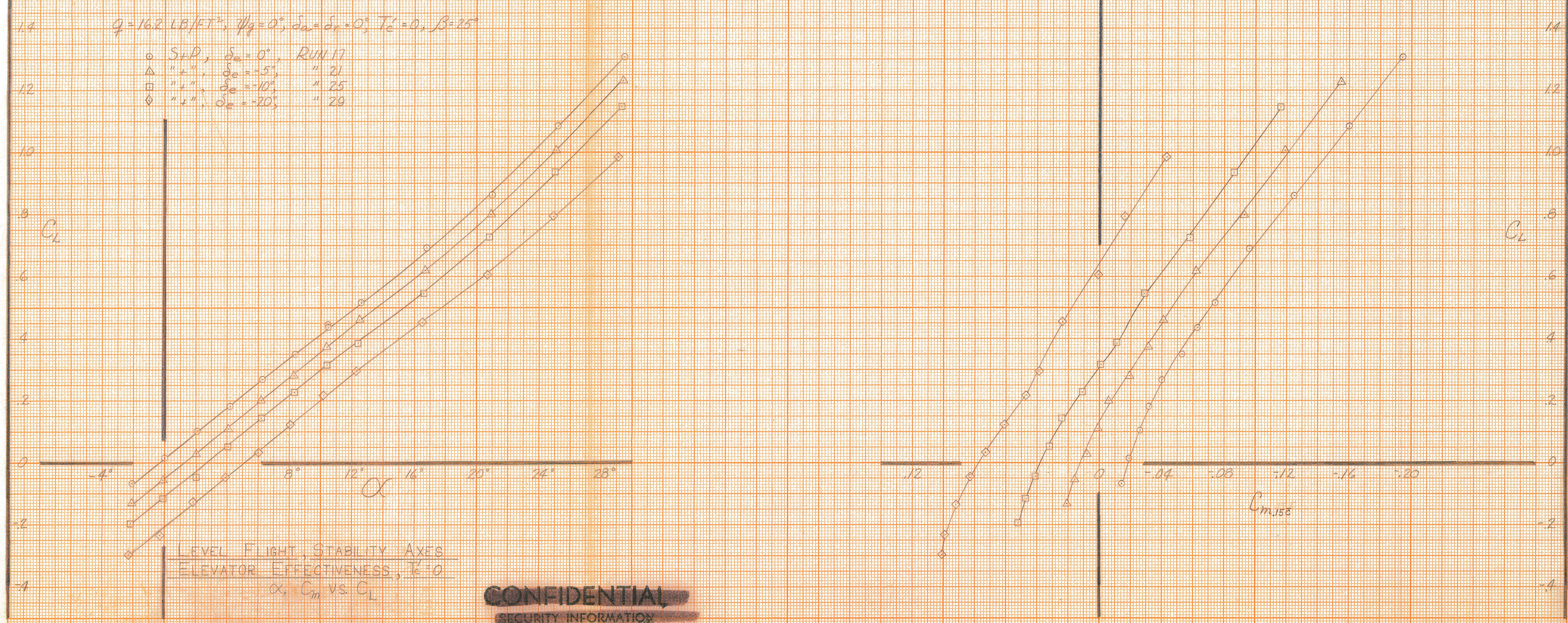

$q = 16.2$ LB/FT^2, $\psi_g = 0°$; $\delta_a = \delta_r = 0°$; $T_c' = 0$, $\beta = 25°$

⊙ S+P, $\delta_e = 0°$, RUN 17
△ " + ", $\delta_e = -5°$, " 21
⊡ " + ", $\delta_e = -10°$, " 25
◇ " + ", $\delta_e = -20°$, " 29

LEVEL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 0$
α, C_m VS. C_L

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CVAL TEST 96
MODEL XFY-1

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PAGE 44
REPORT CVAL96
FIG. 5

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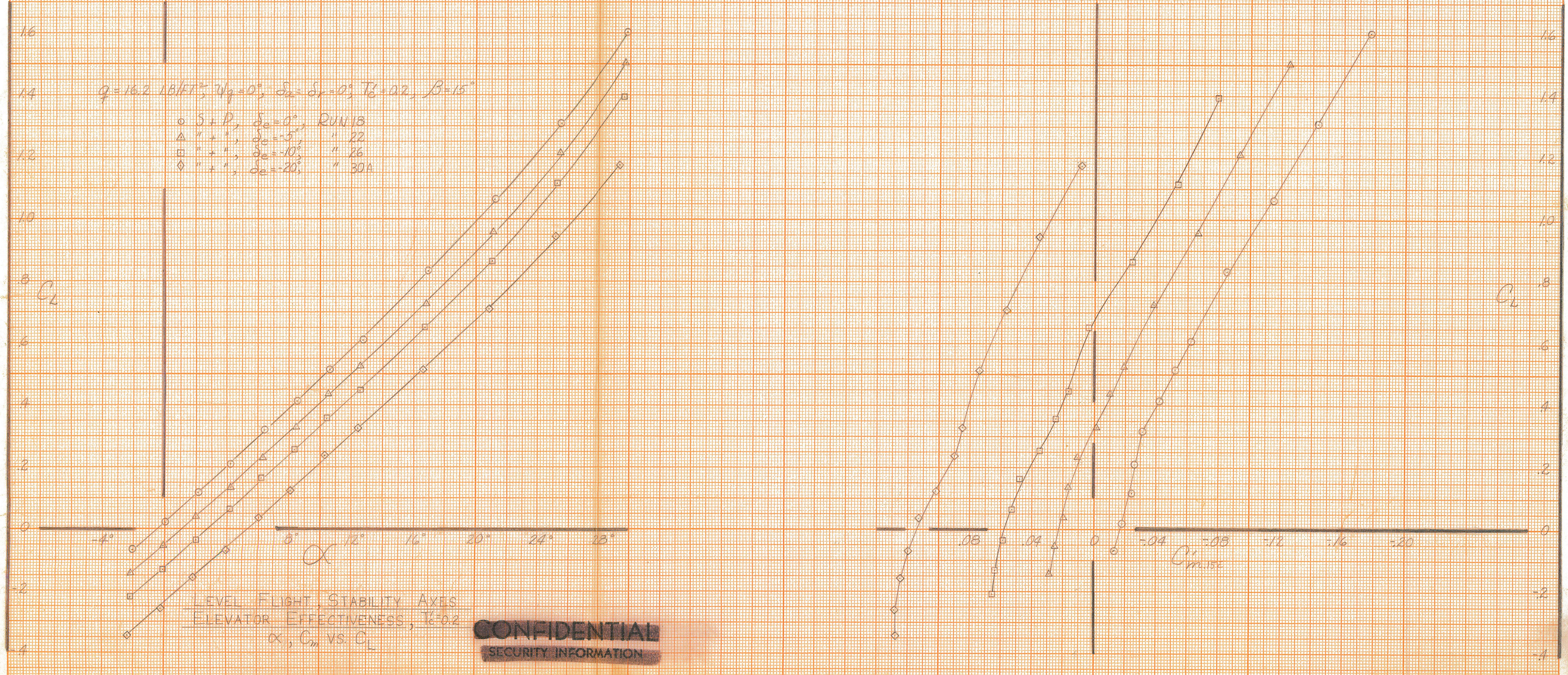
[redacted]

[redacted]

94
PLOT 27
18-○
22-△
26-□
30-◇



LEVEL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, T'c = 0.2
α, Cm VS. CL

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SECURITY INFORMATION

CVAL TEST 96
MODEL XFY-1

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PAGE 45
REPORT CVAL 96
FIG. 6

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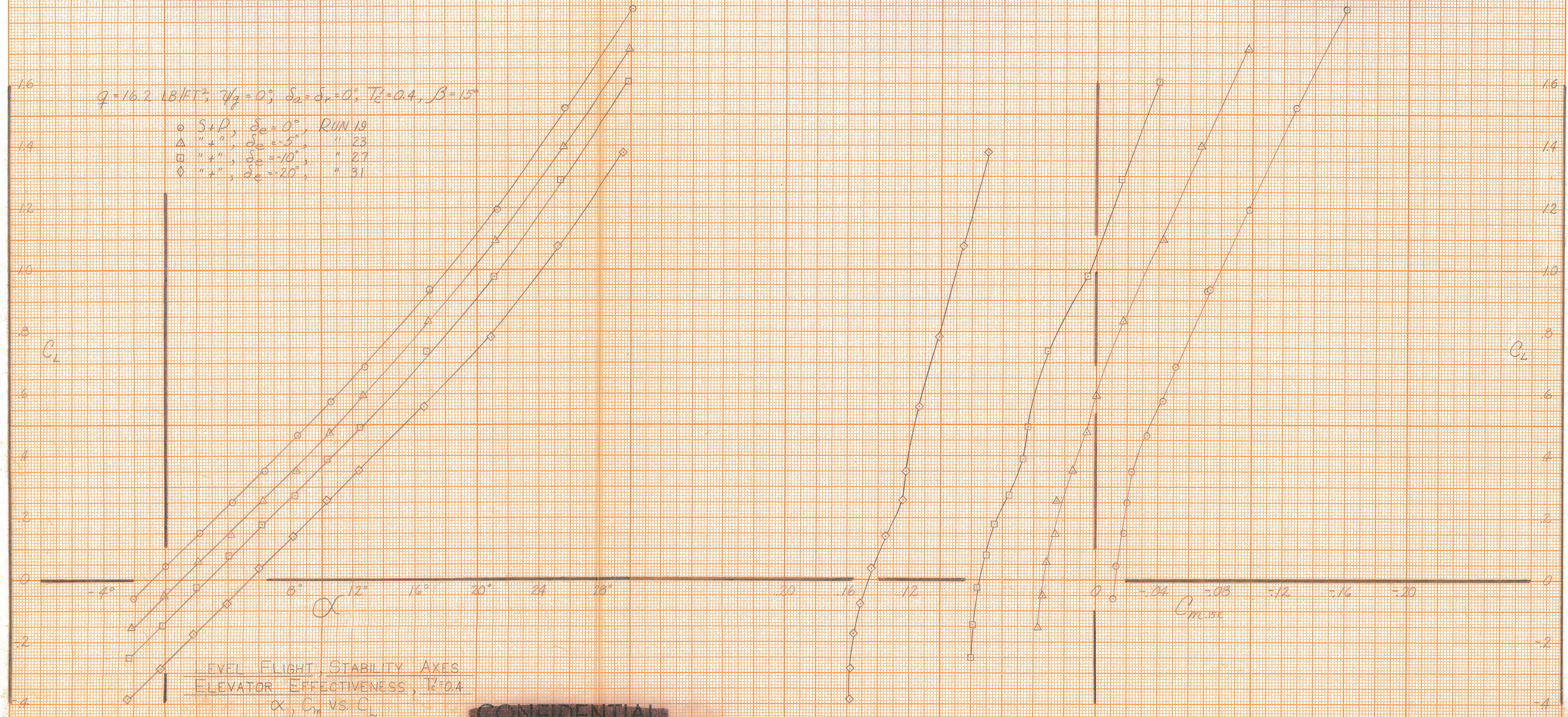
PLOT 28
RUN 19 ⊙
23 △
27 ⊡
31 ◇



$q = 16.2$ LB/FT²; $\psi_g = 0°$; $\delta_a = \delta_r = 0°$; $T_c' = 0.4$, $\beta = 15°$

LEVEL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 0.4$
α, C_m VS. C_L

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CVAL TEST 96
MODEL XFY-1

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PAGE 46
REPORT CVAL 96
FIG. 7

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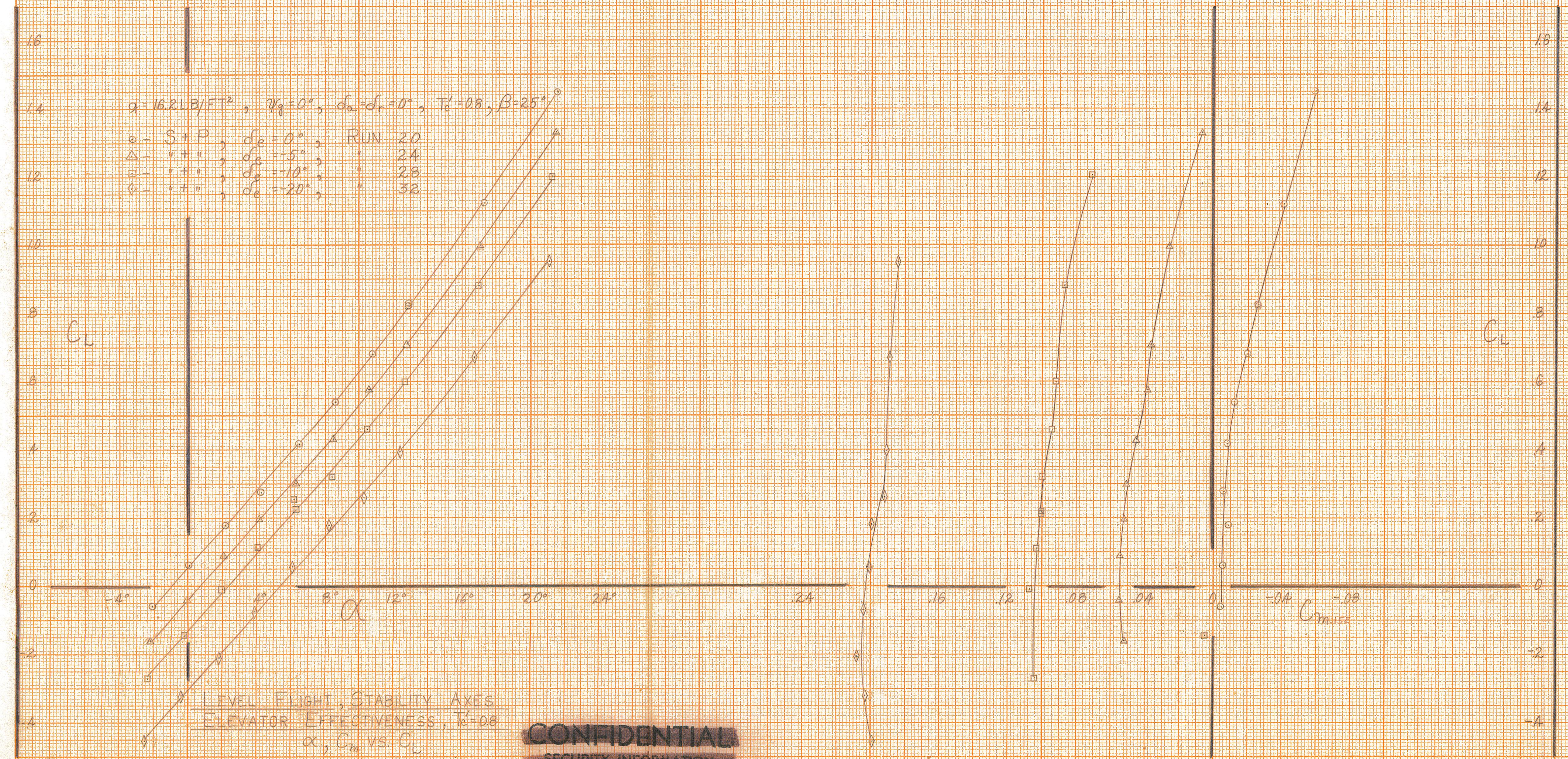
Plot ㉙
20 ○
24 △
28 ⊡
32 ◇



LEVEL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 0.8$
α, C_m vs. C_L

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CVAL TEST 96
MODEL XFY-1

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PAGE 47
REPORT CVAL 96
FIG. 8

[redacted]

[redacted]

[redacted]

TEST 96

PLOT 22

⊙ 17
△ 18
⊡ 19
◇ 20

N

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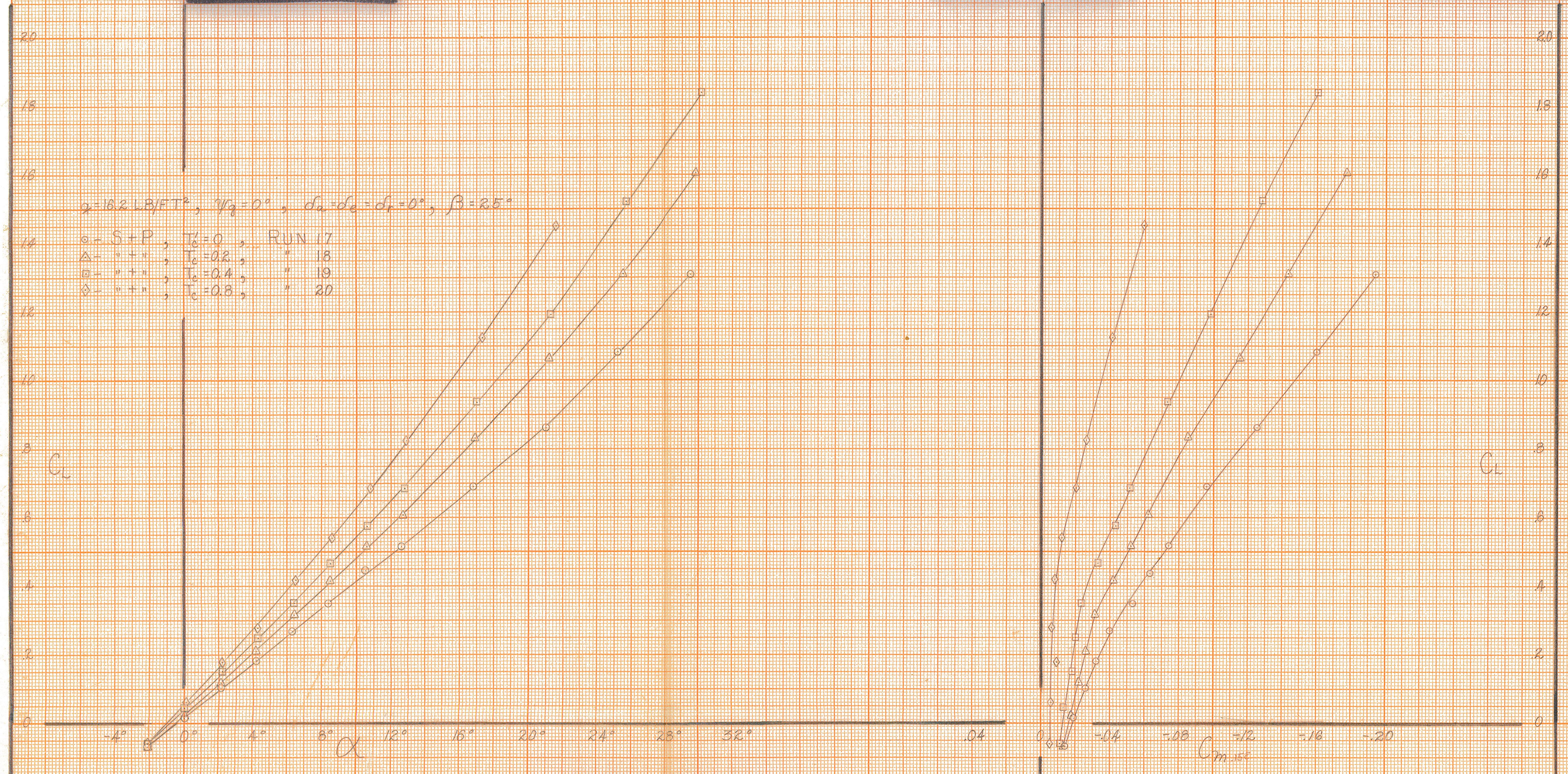

LEVEL FLIGHT, STABILITY AXES
EFFECT OF T_c', $\delta_e = 0°$
α, C_m VS. C_L

[redacted]

CVAL TEST 96
MODEL XFY-1

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PAGE 48
REPORT CVAL96
FIG. 9

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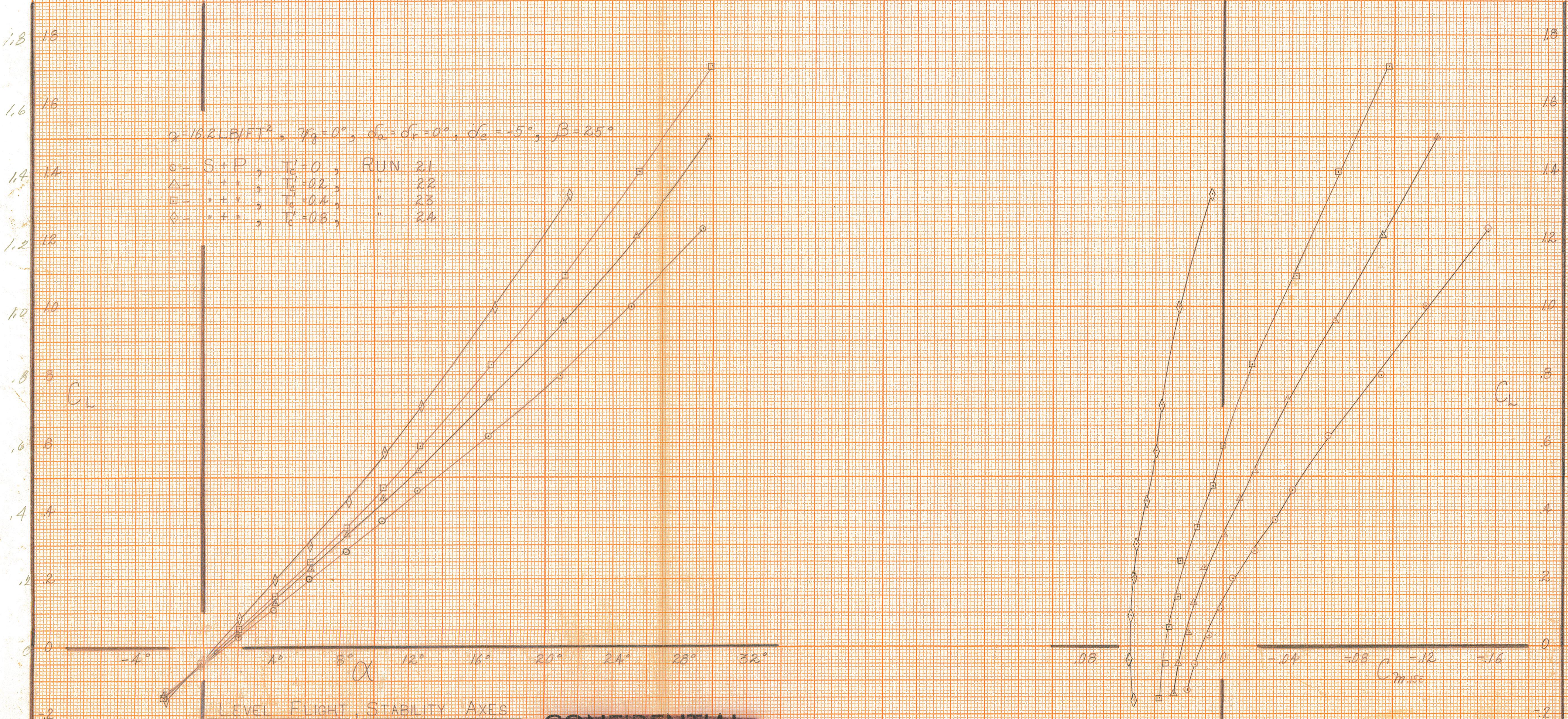
TRADE STANDARD MARK REG. U.S. PAT. OFF. CROSS SECTION MILLIMETER 100% RAG PAPER MADE IN U.S.A.

TEST 96
PLOT 23
⊙-21
△-22
⊡-23
◇-24



LEVEL FLIGHT, STABILITY AXES
EFFECT OF T_c', $\delta_e = -5°$
α, C_m VS. C_L

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CVAL TEST 96
MODEL XFY-1

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PAGE 49
REPORT CVAL96
FIG. 10

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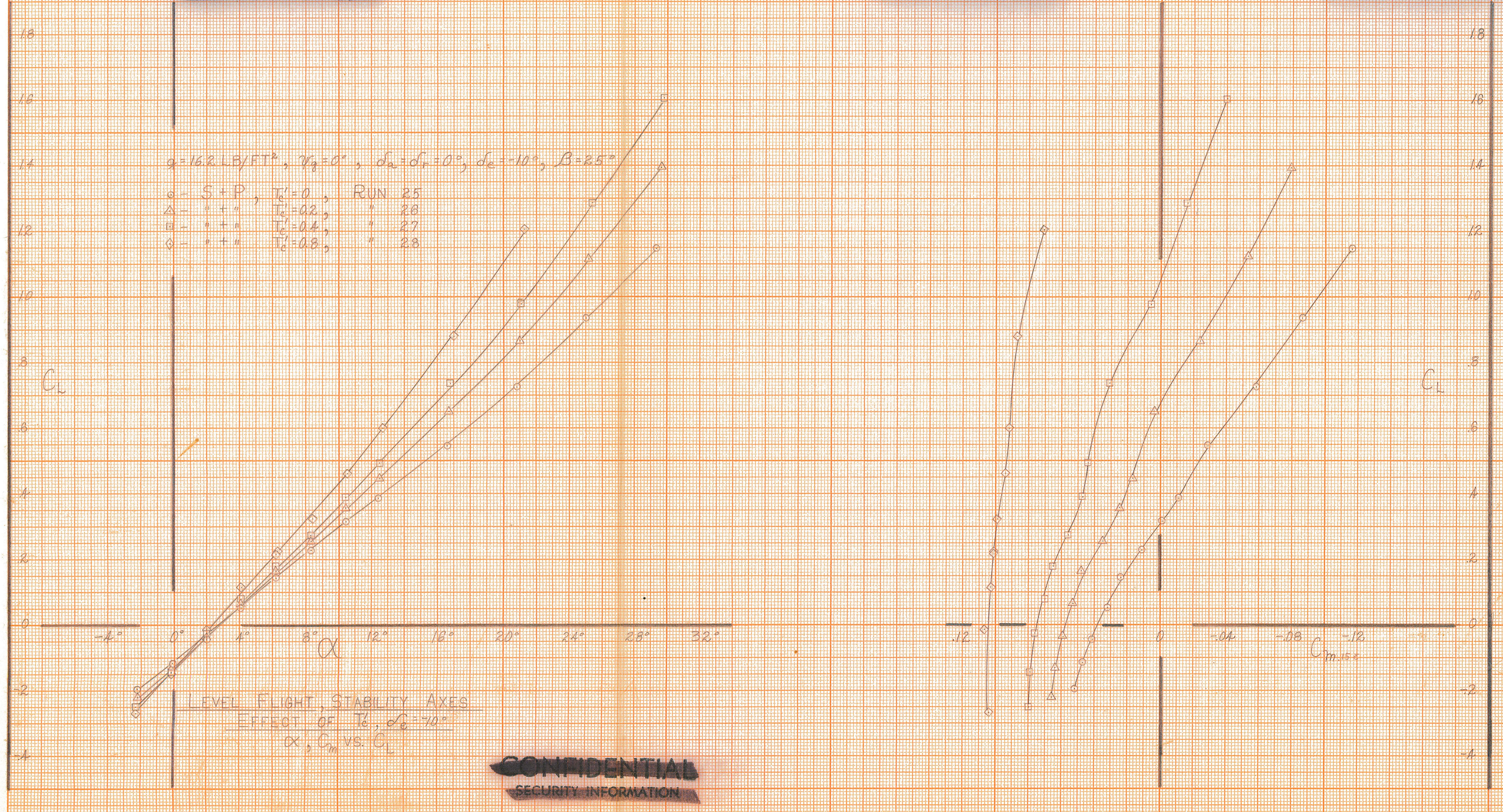
96
PLOT 24
25 - ⊙
26 - △
27 - ⊡
28 - ◇



LEVEL FLIGHT, STABILITY AXES
EFFECT OF T_c', $\delta_e = -10°$
α, C_m VS. C_L

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CVAL TEST 96
MODEL XFY-1

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PAGE 50
REPORT CVAL 96
FIG. 11

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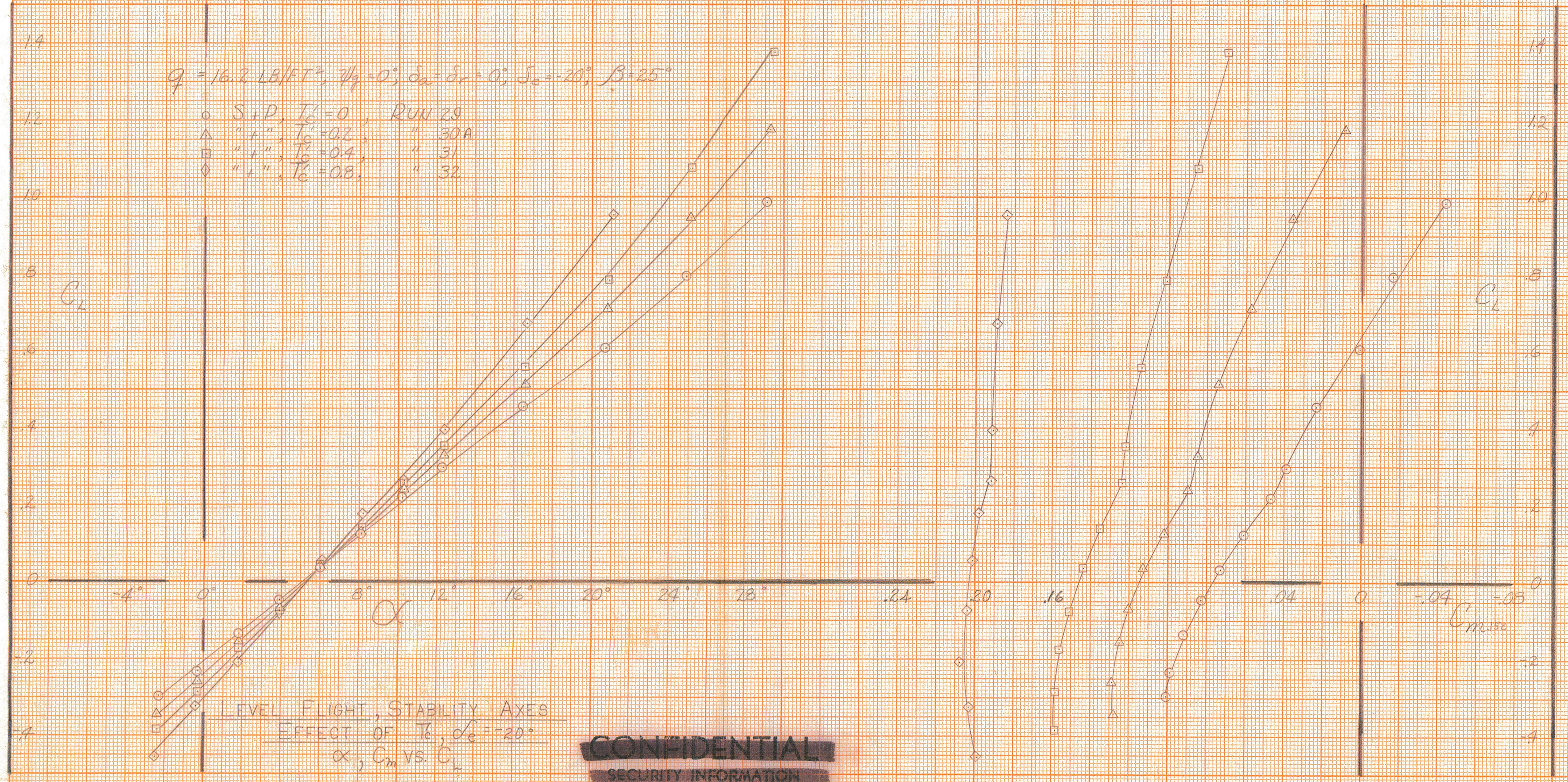
[redacted]

[redacted]

96
PLOT 25
29-⊙
30-△
31-⊡
32-◇



LEVEL FLIGHT, STABILITY AXES
EFFECT OF T_c', $\delta_e = -20°$
α, C_m VS. C_L

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NEW YORK

Test 96
Plot 51
166 △
167 ⊙
169 ⊡
165 ◇

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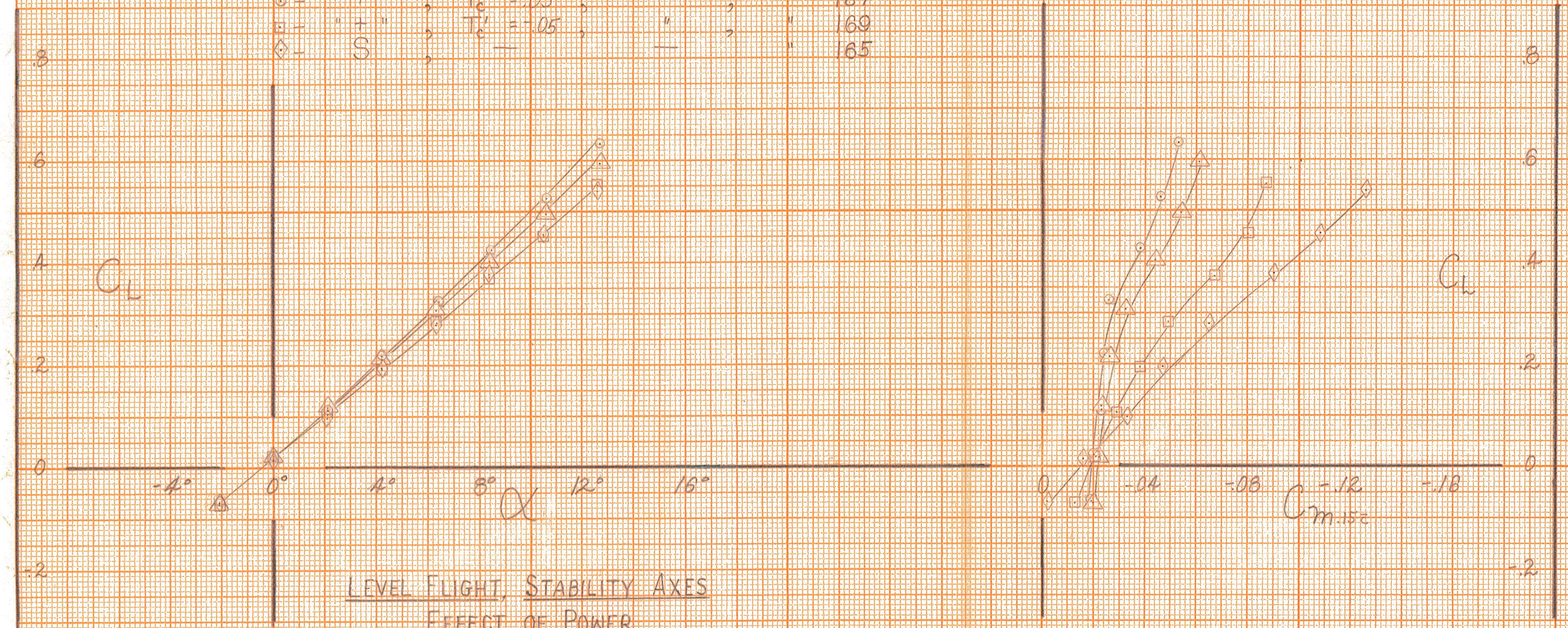
[redacted] [redacted]

$q = 63\ \text{LB/FT}^2$, $\psi_g = 0°$, $\delta_a = \delta_e = \delta_r = 0°$

△ – S + P , $T_c' = 0$, $\beta = 55°$, RUN 166
⊙ – " + " , $T_c' = .05$, " , " 167
⊡ – " + " , $T_c' = -.05$, " , " 169
◇ – S , — , — , " 165



LEVEL FLIGHT, STABILITY AXES
EFFECT OF POWER
ON LONGITUDINAL CHARACTERISTICS
α , C_m VS C_L

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MODEL XFY-1

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PAGE 52
REPORT CVAL 96
FIG. 13

[redacted]

[redacted]

[redacted]

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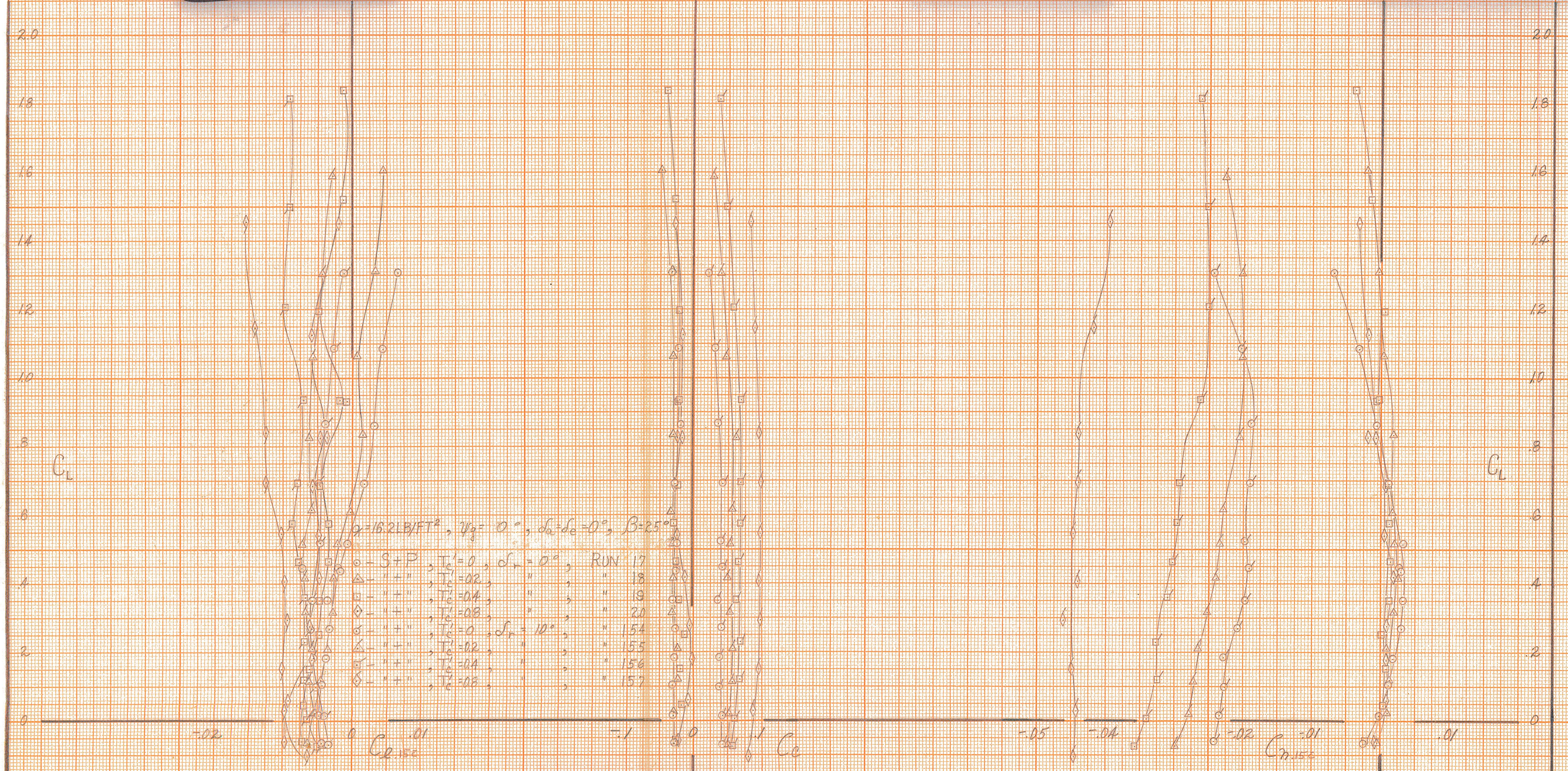
PLOT 48
17 ⊙
18 △
19 ⊡
20 ◇
154 ⊙
155 △
156 ⊡
157 ◇



[redacted]

LEVEL FLIGHT, STABILITY AXES
EFFECT OF T_c'
ON RUDDER CONTROL, $\psi_g = 0°$
C_l, C_c, C_n VS. C_L

[redacted]

TRADE STANDARD MARK REG. U.S. PAT. OFF. CROSS SECTION MILLIMETER 100% RAG PAPER MADE IN U.S.A.

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MODEL XFY-1

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PAGE 53
REPORT CVAL 96
FIG. 14

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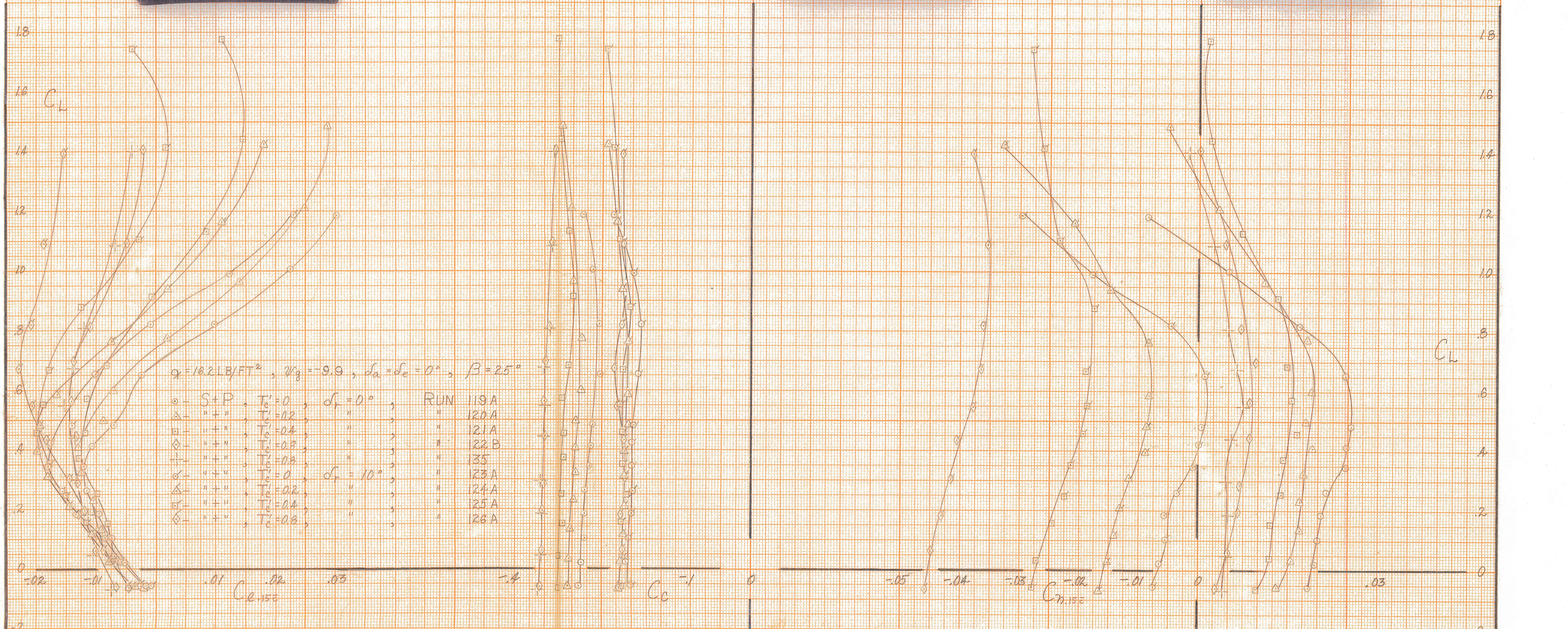
TEST 96

PLOT 49

119A ⊙
120A △
121A ⊡
122B ◇
135 +
123A ⊙
124A △
125A ⊡
126A ◇



LEVEL FLIGHT, STABILITY AXES
EFFECT OF T_c'
ON RUDDER CONTROL, $\psi_g = -9.9°$
C_l, C_c, C_n VS. C_L

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TEST 96
PLOT 30

[redacted]

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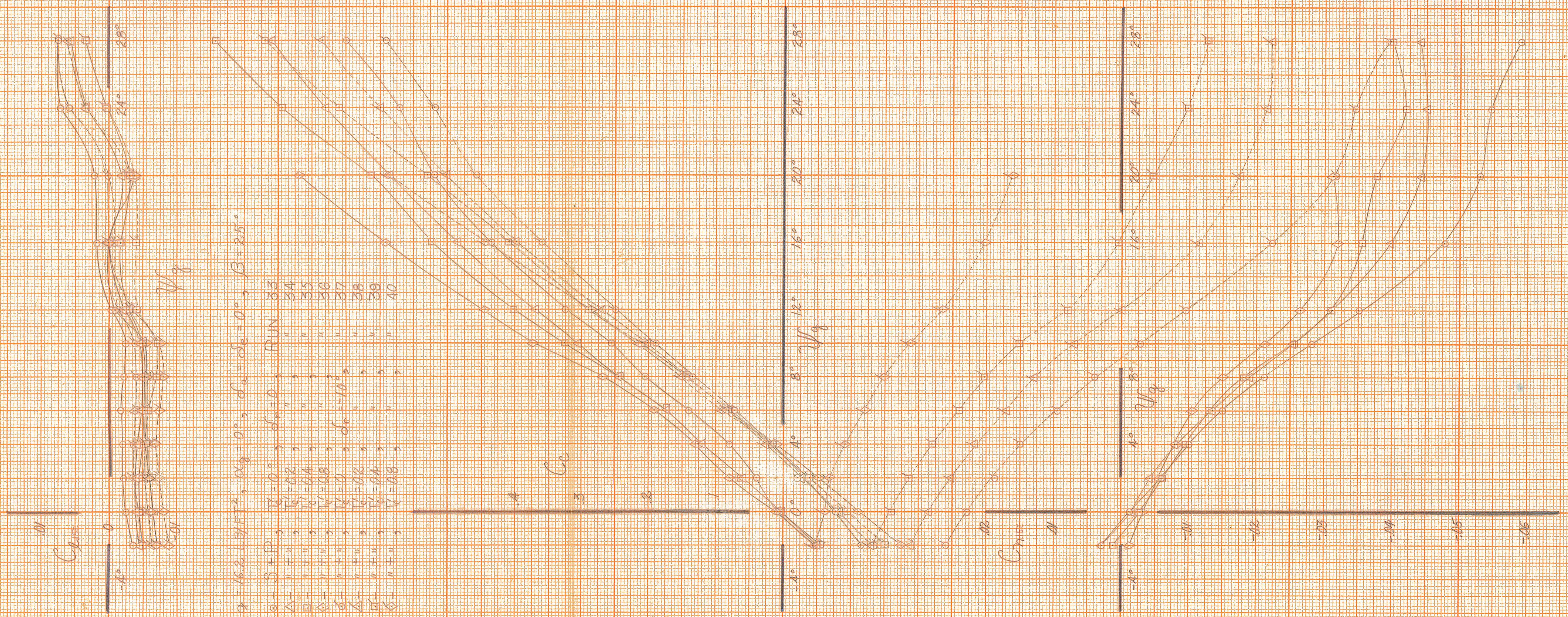
33A ⊙
34 △
35 □
36 ◇
37 ⌀
38 △
39 □
40 ◇



LEVEL FLIGHT, STABILITY AXES
EFFECT OF T_c'
ON RUDDER CONTROL IN YAW, α_g=0°
C_l, C_c, C_n VS. ψ_g

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~~SECURITY INFORMATION~~

CVAL TEST 96
MODEL XFY-1

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 55
REPORT CVAL96
FIG. 16

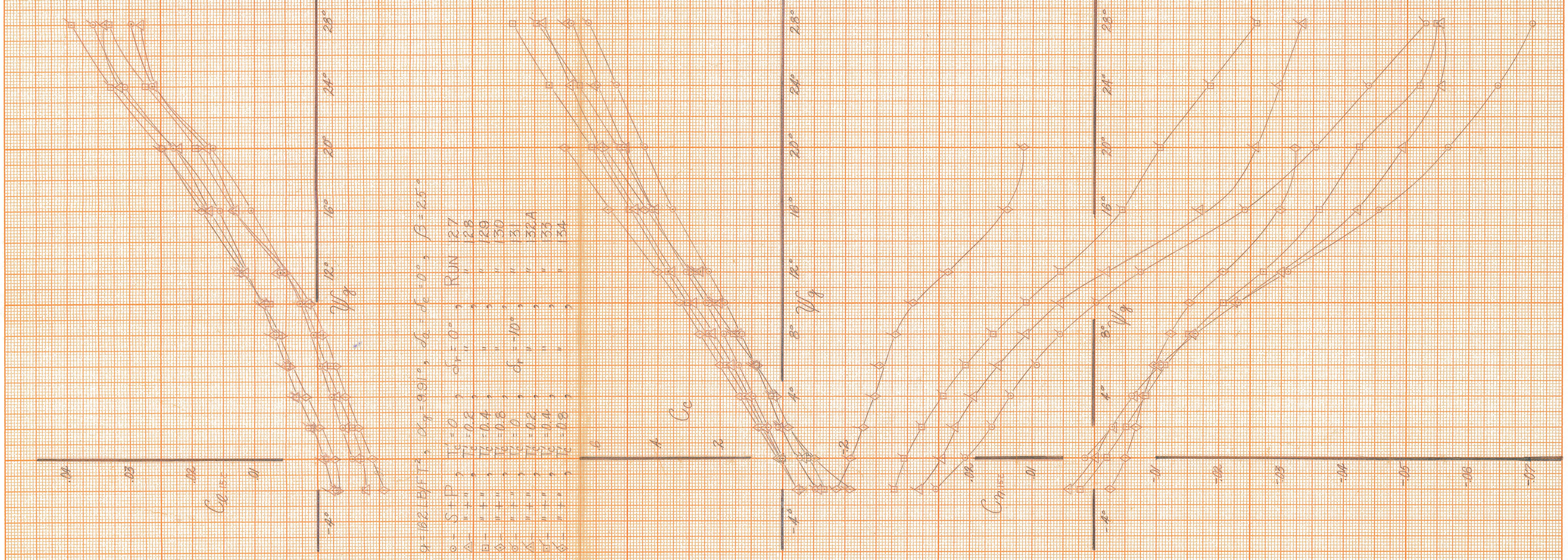
[redacted]

[redacted]

[redacted]

Test 96
Plot 31

127 ⊙
128 △
129 ⊡
130 ◇
131 ⊙
132 △
133 ⊡
134 ◇



LEVEL FLIGHT, STABILITY AXES
EFFECT OF T_c'
ON RUDDER CONTROL IN YAW, α_g = 9.9°
C_l, C_c, C_n VS. V_g

[redacted]

Test 96

Plot 32

136 ○
137 △
138 □
139 ◇
140 ○ˊ
141 △ˊ
142 □ˊ
143 ◇ˊ

CVAL TEST 96
MODEL XFY-1

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SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

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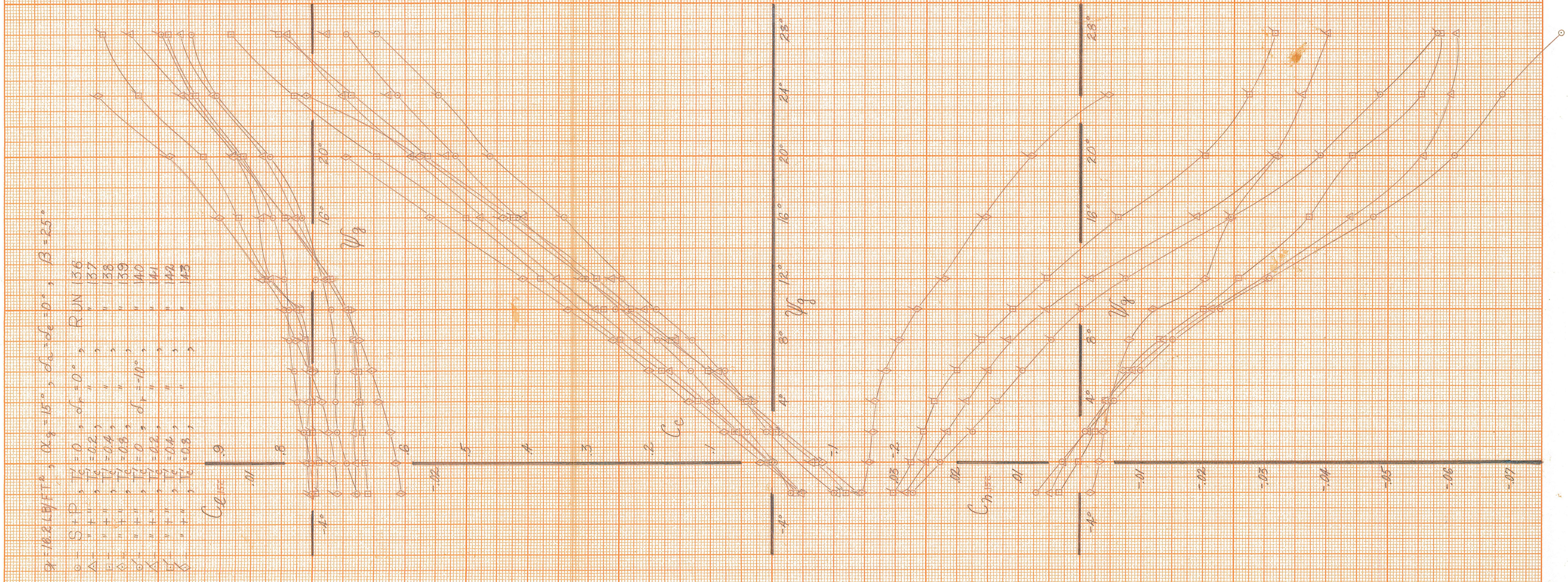
PAGE 56
REPORT CVAL96
FIG. 17

[redacted]

[redacted]



LEVEL FLIGHT, STABILITY AXES
EFFECT OF T_c'
ON RUDDER CONTROL IN YAW, α_g = 15°
C_l, C_c, C_n VS. ψ_g

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CVAL TEST 96
MODEL XFY-1

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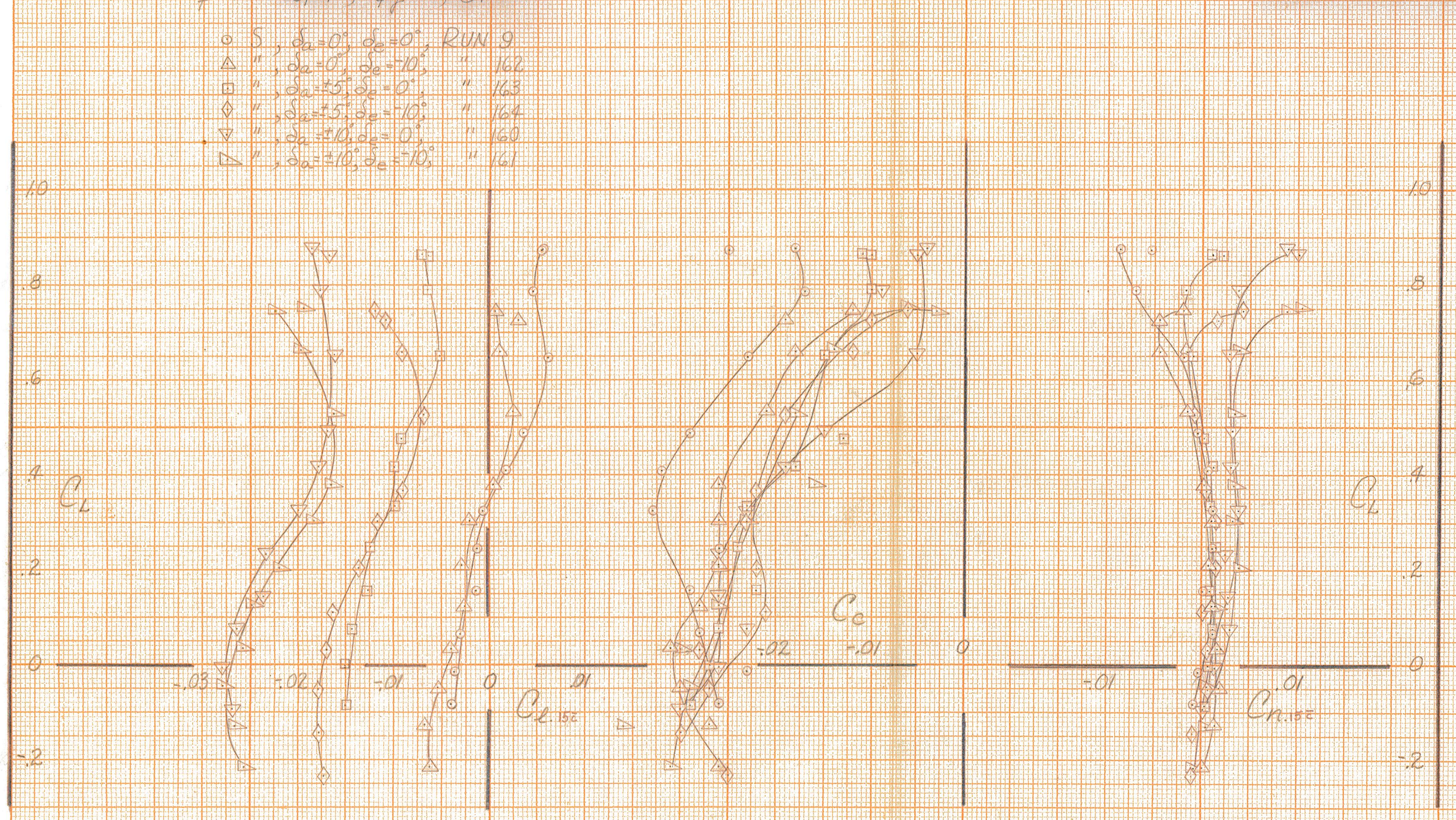
PAGE 57
REPORT CVAL 96
FIG. 18a

[redacted]

[redacted]

[redacted]

Phot 47a
9 ⊙
162 △
163 ⊡
164 ◇
160 ▽
161 ▷



LEVEL FLIGHT, STABILITY AXES
AILERON EFFECTIVENESS, δe = 0° AND -10°
Cl, Cc, Cn VS CL

[redacted]

TEST 96

PLOT 476

9 ⊙
162 △
163 ⊡
164 ◇
160 ▽
161 ◺

ok to carbo.

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MODEL XFY-1

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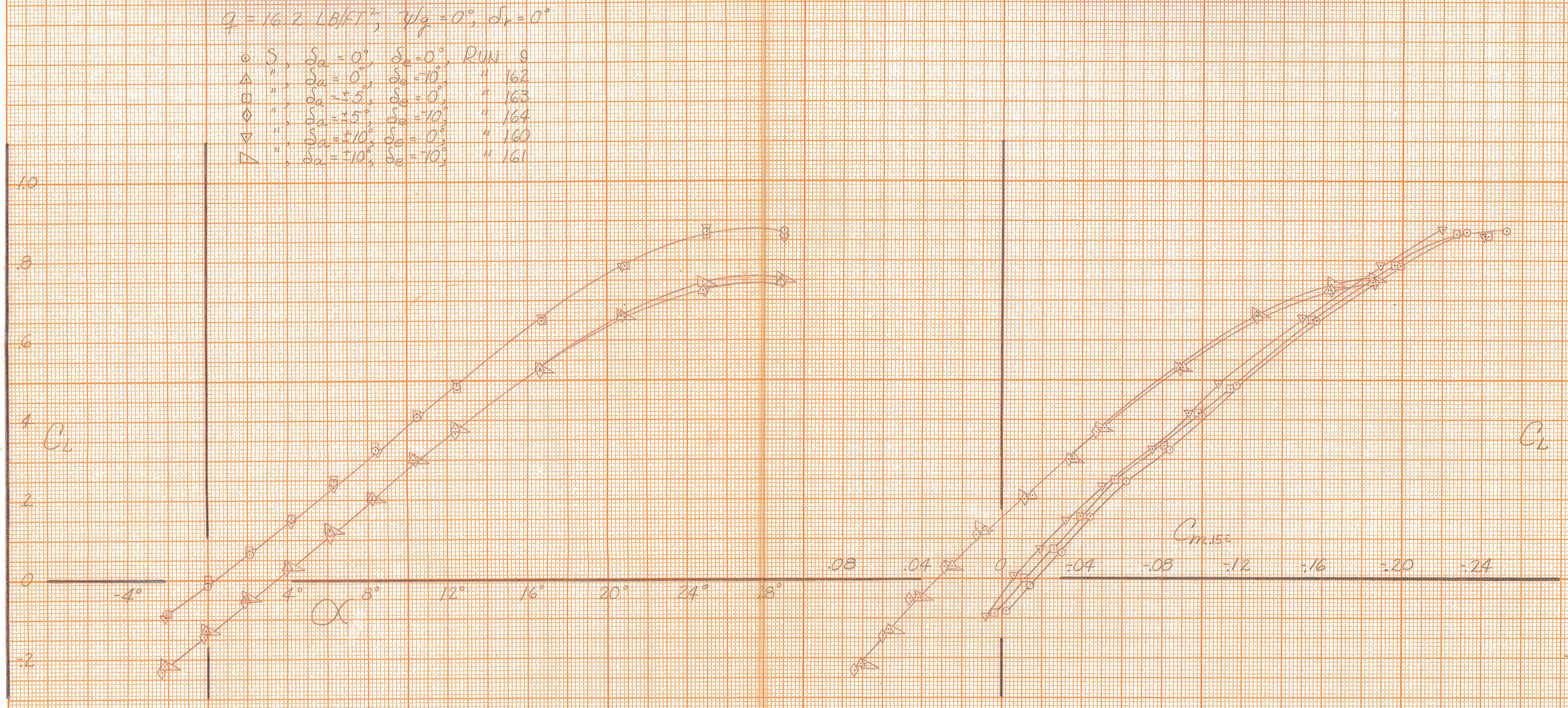
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 58
REPORT CVAL 96
FIG. 18b

[redacted]

[redacted]

[redacted]



LEVEL FLIGHT, STABILITY AXES

AILERON EFFECTIVENESS, $\delta_e = 0°$ AND $-10°$

α, C_m VS. C_L

[redacted]

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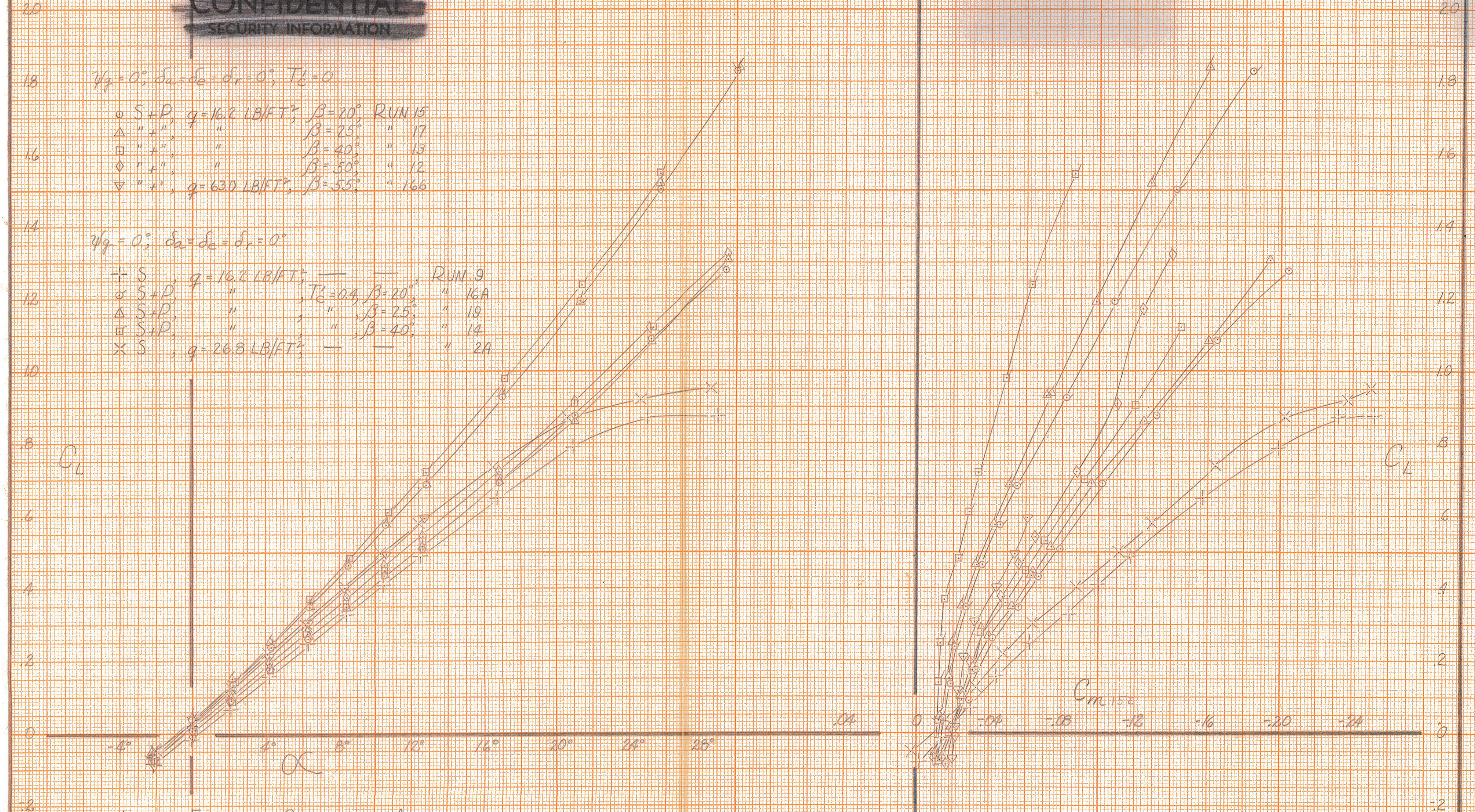
~~SECURITY INFORMATION~~

TEST 96
PLOT 12

15 ○
17 △
13 ⊡
12 ◊
166 ▽
9 -|-
16A ⊙
19 △
14 ⊡
2A ×



LEVEL FLIGHT, STABILITY AXES
EFFECT OF PROPELLER BLADE ANGLE
α, C_m VS. C_L

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TEST 96

PLOT 52

6 ⊙
9 △
2A ⊡
5 ◇
165 ▽

CVAL TEST 96
MODEL XFY-1

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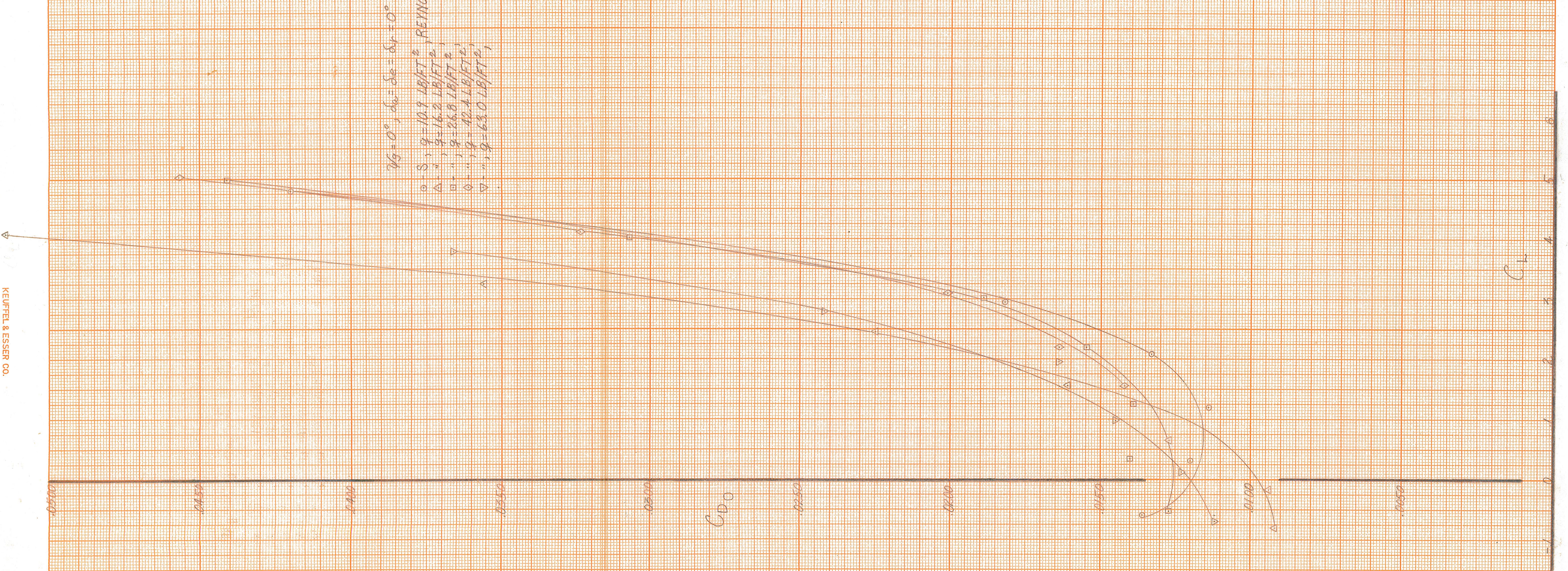
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 60
REPORT CVAL96
FIG. 20

[redacted]



LEVEL FLIGHT STABILITY AXES
EFFECT OF REYNOLDS NUMBER
C_{D_O} VS C_L

[redacted]

Test 96

Plot 17

○ 73

△ 86

□ 76

◇ 81

CVAL TEST 96
MODEL XFY-1

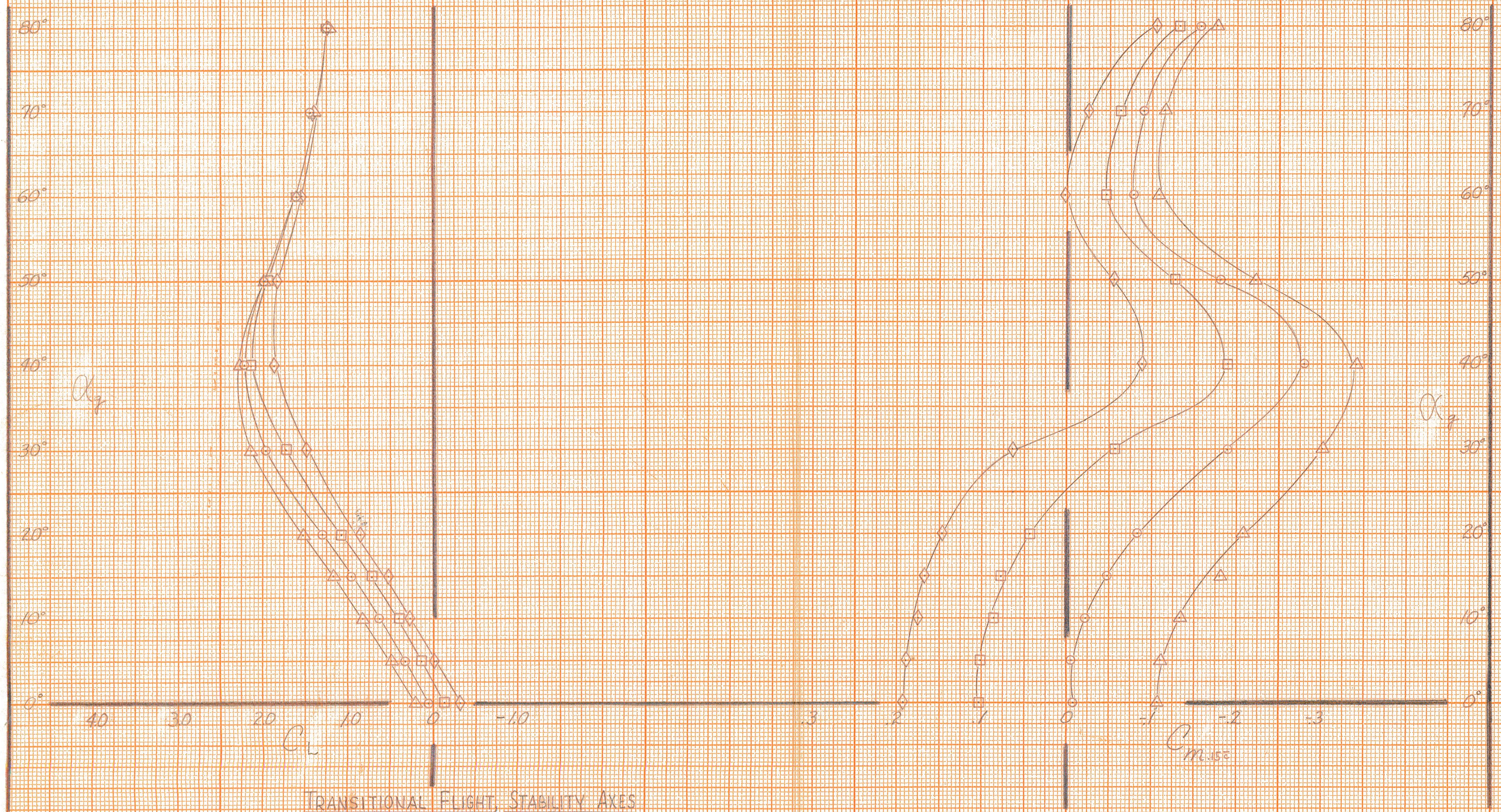
CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 61
REPORT CVAL 96
FIG. 21a

[redacted]

$q = 16.2$ LB/FT^2; $\psi_g = 0°$; $\delta_a = \delta_r = 0°$; $T_c' = 0.8$, $\beta = 15°$

○ WB, VOMFC + P + TUFTS, $\delta_e = 0°$; RUN 73
△ " + " + " , $\delta_e = 10°$; " 86
□ " + " + " , $\delta_e = -10°$; " 76
◇ " + " + " , $\delta_e = -20°$; " 81



TRANSITIONAL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = .8$
C_L, C_m vs α_g

[redacted]

Test 96

Plot 17a

73 ⊙
86 △
76 ⊡
81 ◊

Plot 18a

71 ⊙
87 △
77 ⊡
82 ◊

CVAL TEST 96
MODEL XFY-1

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

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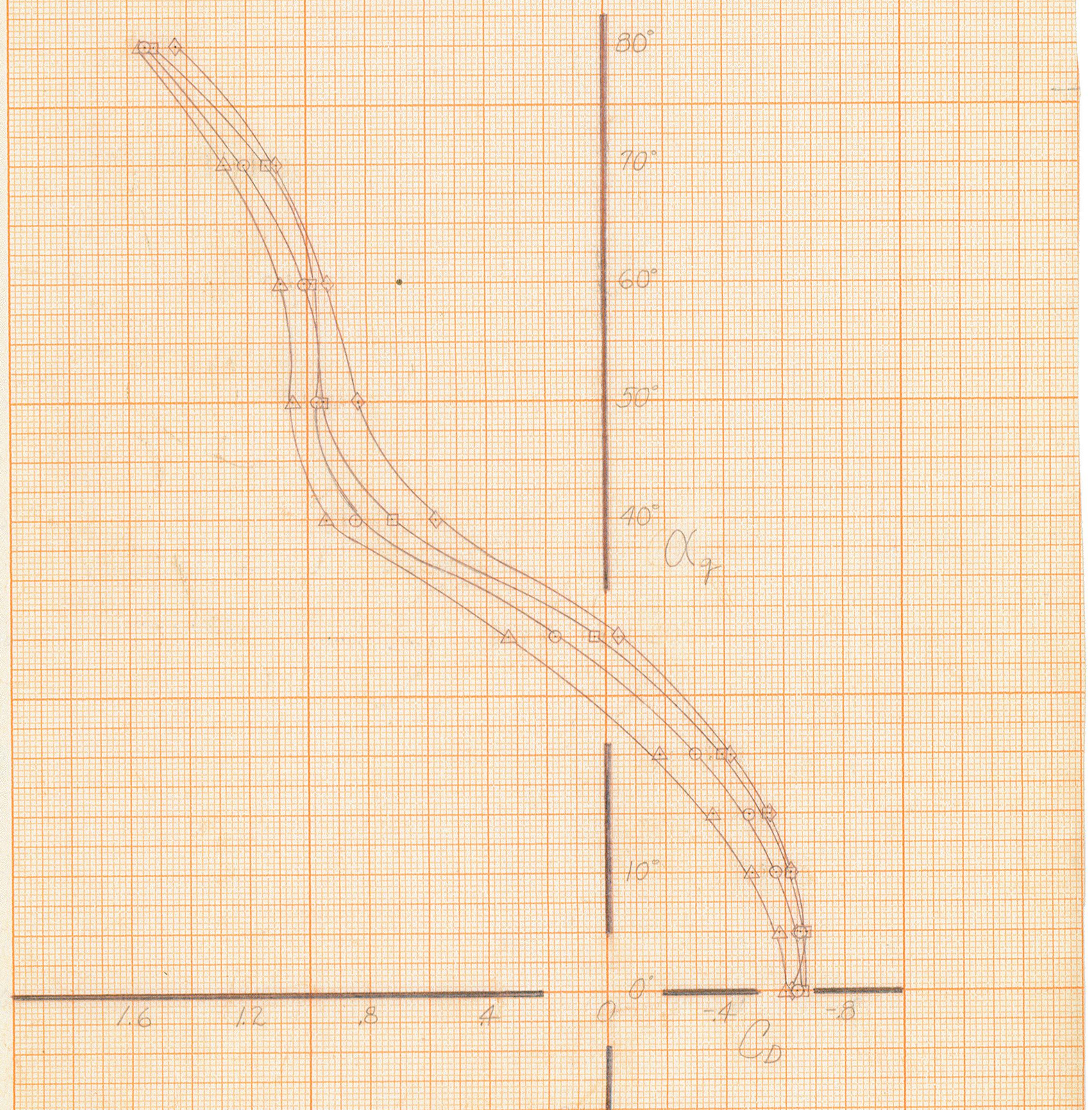
~~SECURITY INFORMATION~~

PAGE 62
REPORT CVAL96
FIG. 21b

$q = 16.2$ LB/FT², $\psi_q = 0°$, $\delta_a = \delta_r = 0°$, $T_c' = 0.8$ $\beta = 15°$

⊙ WB,VOMFC+P+TUFTS, $\delta_e = 0°$, RUN 73
△ " +"+ " , $\delta_e = 10°$, " 86
⊡ " +"+ " , $\delta_e = -10°$, " 76
◊ " +"+ " , $\delta_e = -20°$, " 81



TRANSITIONAL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = .8$
C_D VS α_q

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TEST 96
PLOT 18
○ 71
△ 87
□ 77
◇ 82

CVAL TEST 96
MODEL XFY-1

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SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 63
REPORT CVAL 96
FIG. 22a

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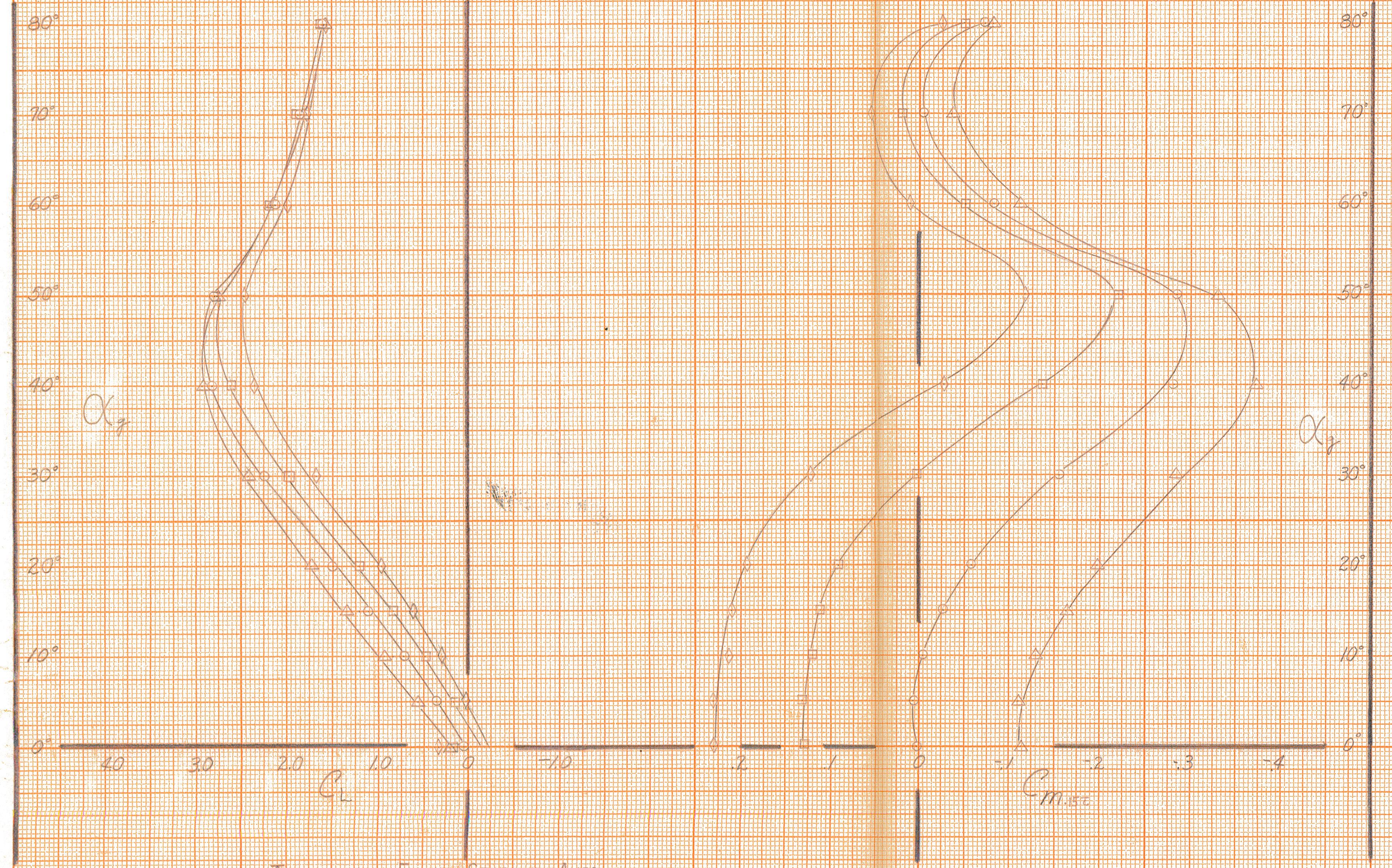
$q = 13.0\ LB/FT^2$; $\psi_g = 0°$; $\delta_a = \delta_r = 0°$; $T_c' = 1.2$, $\beta = 15°$

○ WB, VOMFC + P + TUFTS, $\delta_e = 0°$; RUN 71
△ " + " + " , $\delta_e = 10°$; " 87
□ " + " + " , $\delta_e = -10°$; " 77
◇ " + " + " , $\delta_e = -20°$; " 82



TRANSITIONAL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 1.2$
C_L, C_m vs α_g

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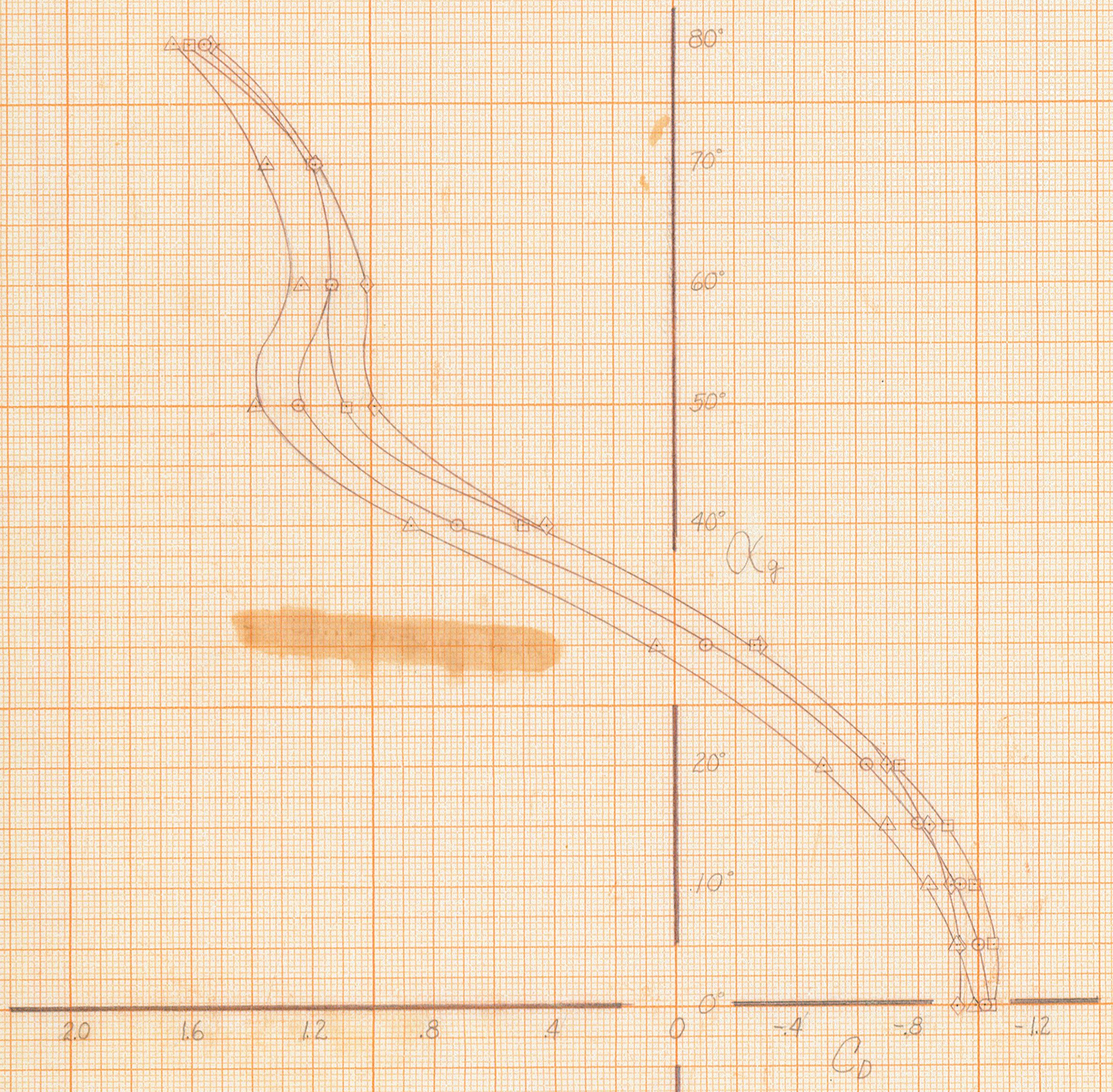
~~SECURITY INFORMATION~~

~~CONFIDENTIAL~~
~~SECURITY INFORMATION~~

TEST 96
PLOT 18a
⊙ 71
△ 87
⊡ 77
◇ 82

$q = 13.0\ LB/FT^2,\ \psi_g = 0°,\ \delta_a = \delta_r = 0°,\ T_c' = 1.2,\ \beta = 15°$

⊙ WB,V OMFC + P + TUFTS, $\delta_e = 0°$, RUN 71
△ " + " + " , $\delta_e = 10°$, " 87
⊡ " + " + " , $\delta_e = -10°$, " 77
◇ " + " + " , $\delta_e = -20°$, " 82



TRANSITIONAL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 1.2$
C_D vs α_g

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TEST 96
PLOT 19

○ 74
△ 88
□ 78
◇ 83

CVAL TEST 96
MODEL XFY-1

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 65
REPORT CVAL96
FIG. 23a

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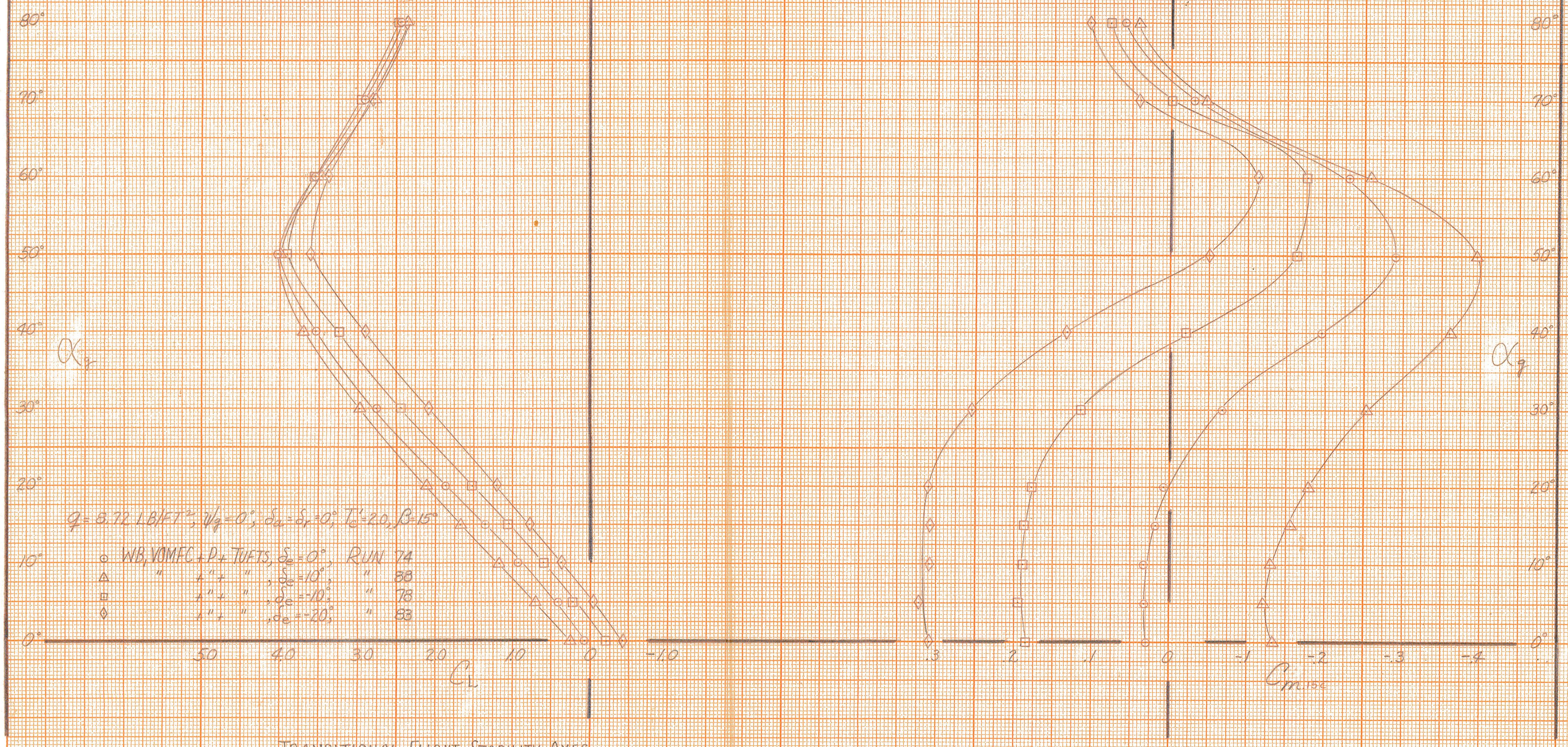

TRANSITIONAL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 2.0$
C_L, C_m vs α_g

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~~SECURITY INFORMATION~~

CVAL TEST 96
MODEL XFY-1

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 66
REPORT CVAL 96
FIG. 23b

[redacted]

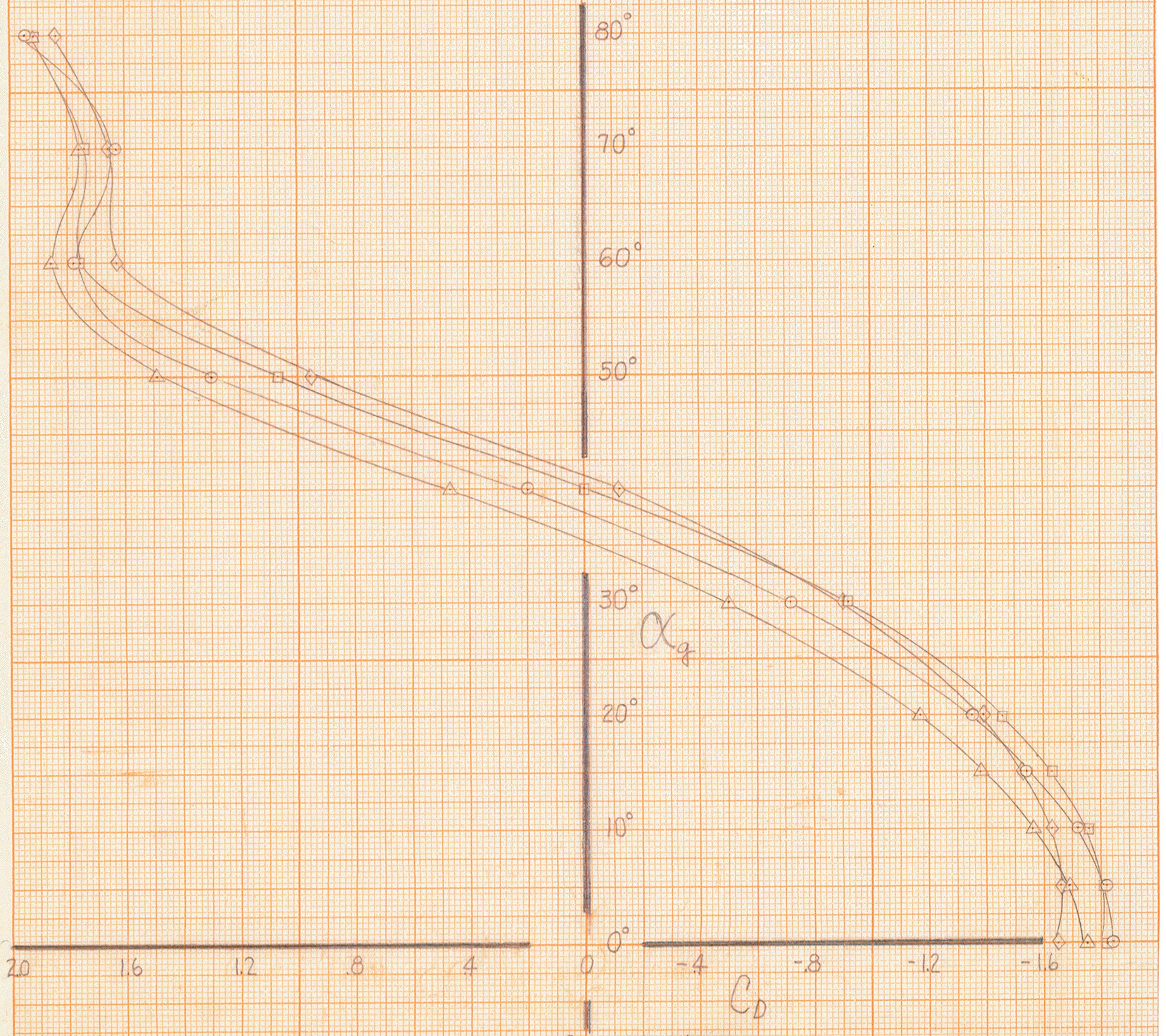
Test 96
Plot 19a
74 ⊙
88 △
78 ⊡
83 ◊

Plot 20a
72 ◊
89 ⊙
79 ⊡
84 △

TRADE STANDARD MARK REG. U.S. PAT. OFF.
CROSS SECTION MILLIMETER
100% RAG PAPER
MADE IN U.S.A.

$q = 8.72\ LB/FT^2,\ \psi_g = 0°,\ \delta_a = \delta_r = 0°,\ T_c' = 2.0,\ \beta = 15°$

⊙ WB, VOMFC + P + TUFTS, $\delta_e = 0°$, RUN 74
△ " + " + " , $\delta_e = 10°$, " 88
⊡ " + " + " , $\delta_e = -10°$, " 78
◊ " + " + " , $\delta_e = -20°$, " 83



TRANSITIONAL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 2.0$
C_D VS α_q

[redacted]

TEST 96
PLOT 20

◇ ◇ 72
○ ○ 89
□ 79
△ △ 84

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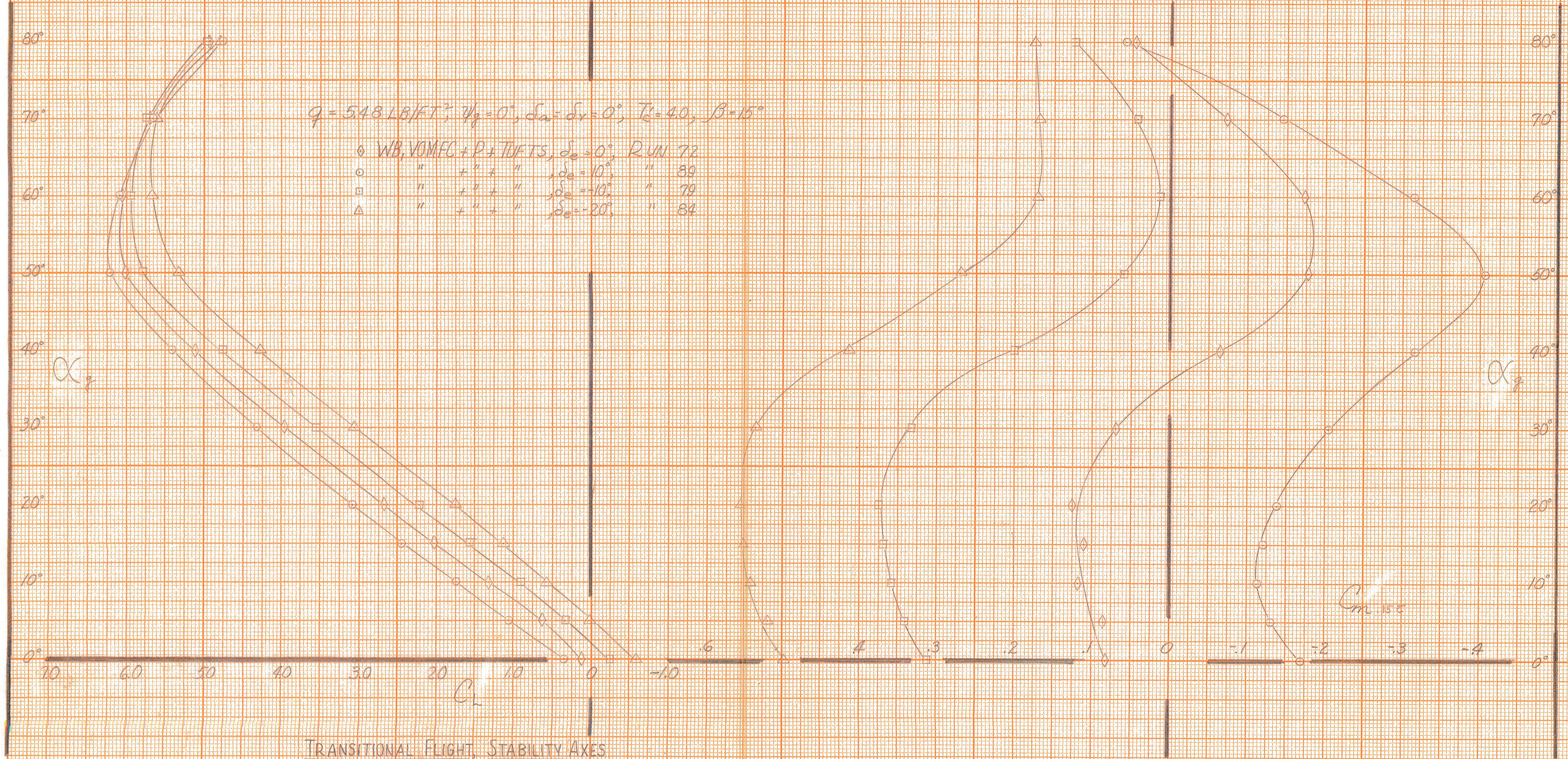
~~SECURITY INFORMATION~~

[redacted]

[redacted]



$q = 5.48\ LB/FT^2;\ \psi_g = 0°;\ \delta_a = \delta_r = 0°;\ T_c' = 4.0;\ \beta = 15°$

◇ WB, VOMFC + P + TUFTS, $\delta_e = 0°$; RUN 72
○ " + " + " , $\delta_e = 10°$; " 89
□ " + " + " , $\delta_e = -10°$; " 79
△ " + " + " , $\delta_e = -20°$; " 84

TRANSITIONAL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 4.0$
C_L, C_m vs α_q

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CVAL TEST 96
MODEL XFY-1

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PAGE 68
REPORT CVAL 96
FIG. 24b

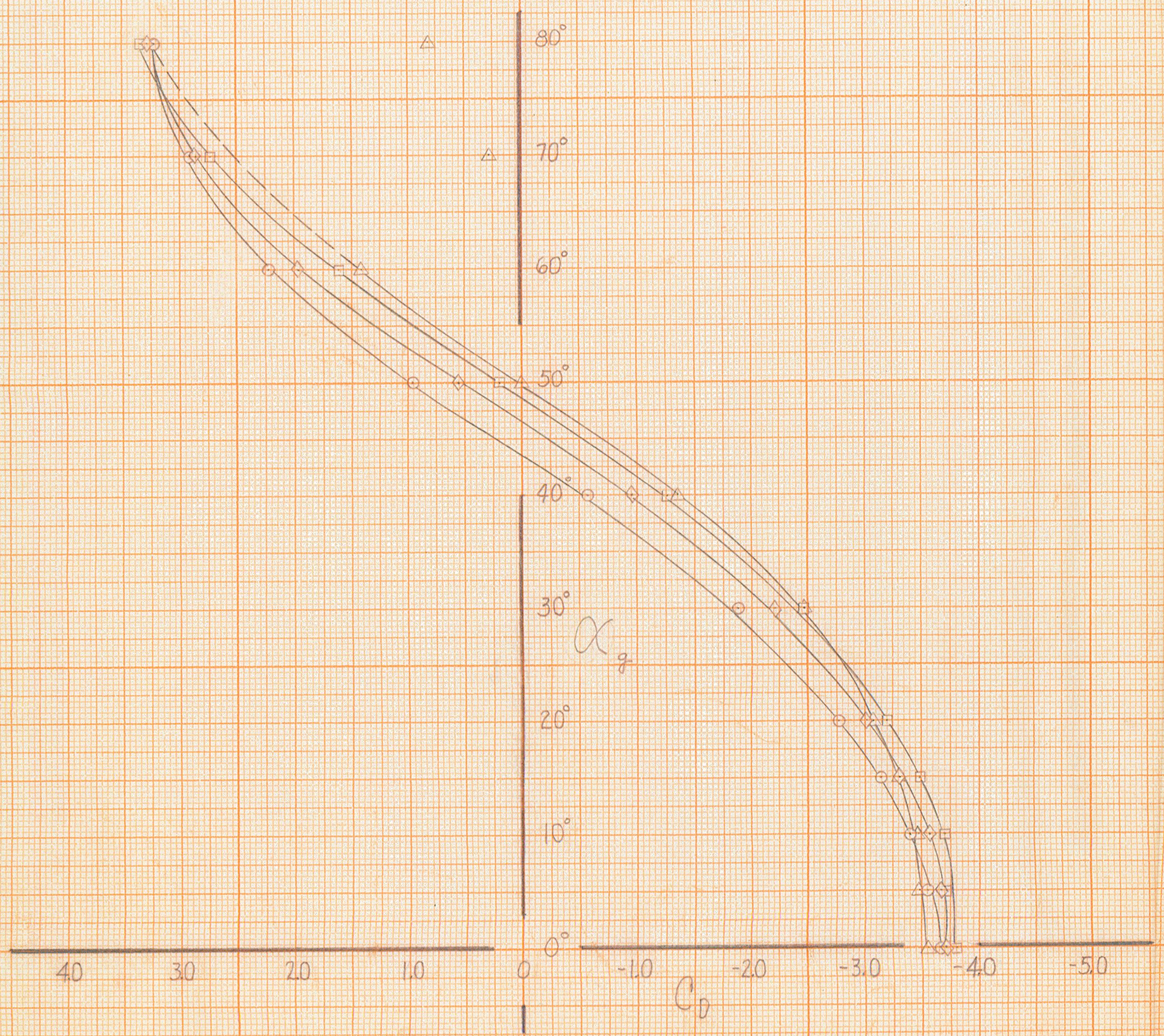
[redacted]

Plot 20a

◇ 72
○ 89
□ 79
△ 84

$q = 5.48$ LB/FT^2, $\psi_g = 0°$, $\delta_a = \delta_r = 0°$, $T_c' = 4.0$, $\beta = 15°$

◇ WB$_1$V$_0$M$_F$C + P + TUFTS, $\delta_e = 0°$, RUN 72
⊙ " + " + " , $\delta_e = 10°$, " 89
⊡ " + " + " , $\delta_e = -10°$, " 79
△ " + " + " , $\delta_e = -20°$, " 84



TRANSITIONAL FLIGHT, STABILITY AXES

ELEVATOR EFFECTIVENESS, $T_c' = 4.0$

C_D vs α_g

[redacted]

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MODEL XFY-1

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PAGE 69
REPORT CVAL 96
FIG. 25a

TEST 96
PLOT 21
○ 75
△ 90
□ 80
◇ 85

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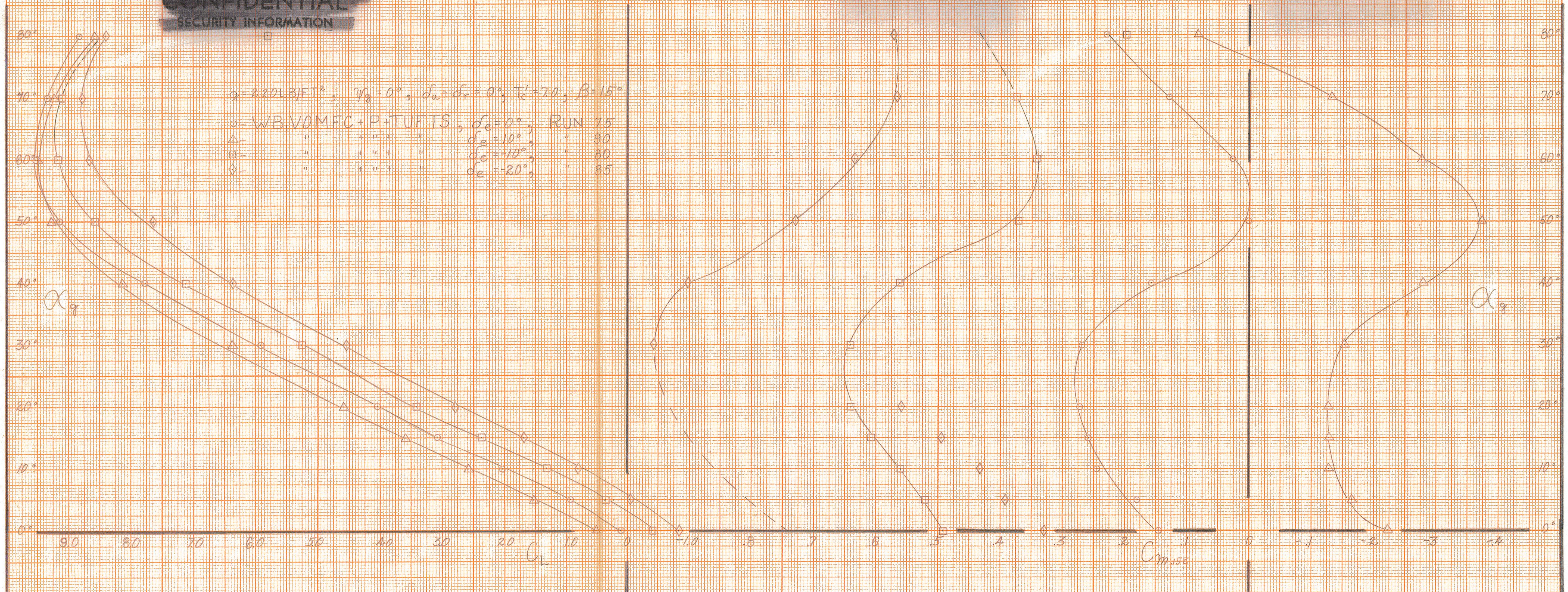

TRANSITIONAL FLIGHT, STABILITY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 7.0$
C_L, C_m vs α_g

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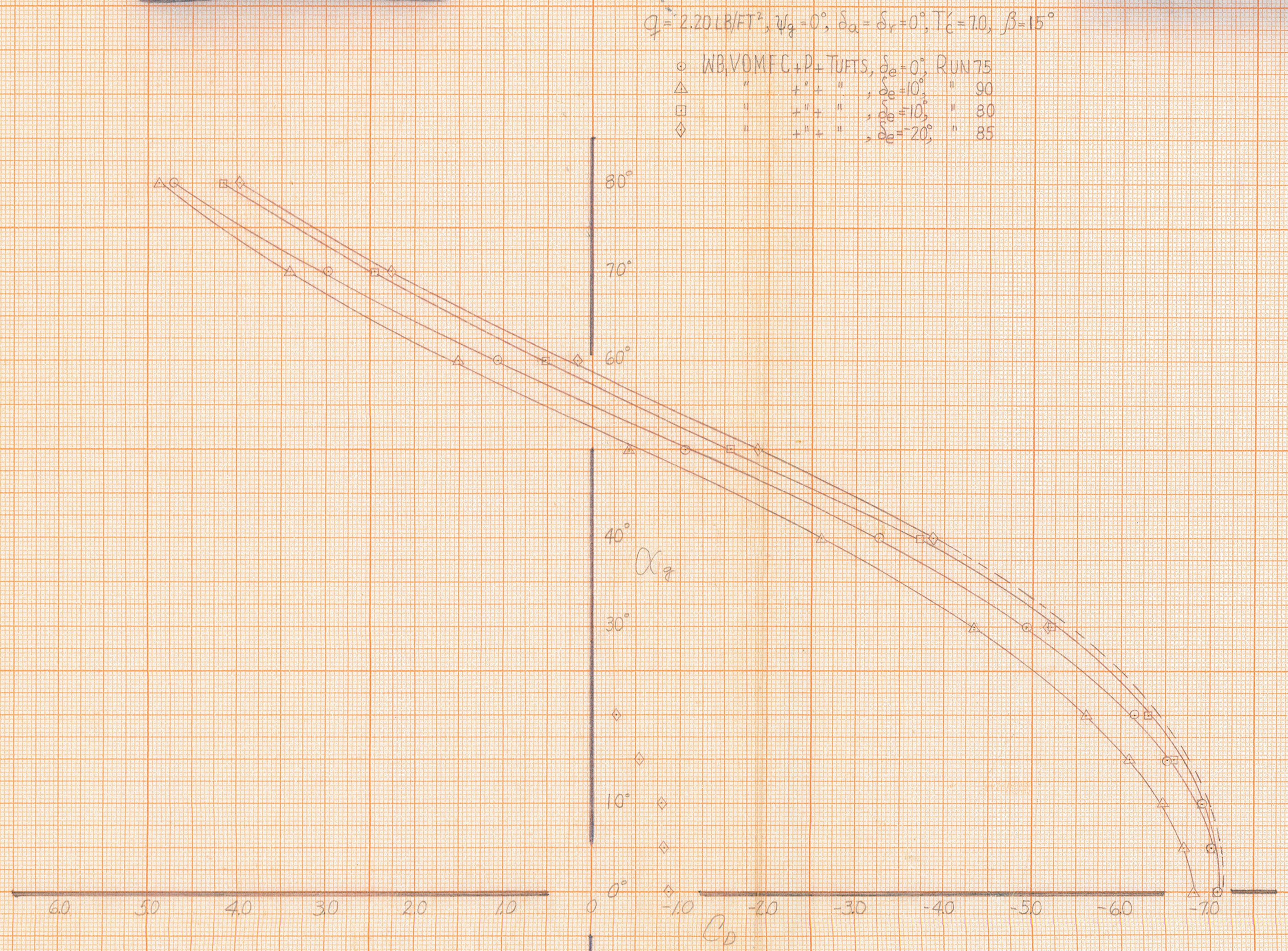
PAGE 70
REPORT CVAL 96
FIG. 25b

test 96
Plot 21 a

75 ⊙
90 △
80 ⊡
85 ◇

[redacted]



TRANSITIONAL FLIGHT, STABILITY AXES

ELEVATOR EFFECTIVENESS, $T'_c = 7.0$

C_D VS α_q

[redacted]

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PAGE 71
REPORT CVAL 96
FIG. 26a

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[redacted]

[redacted]

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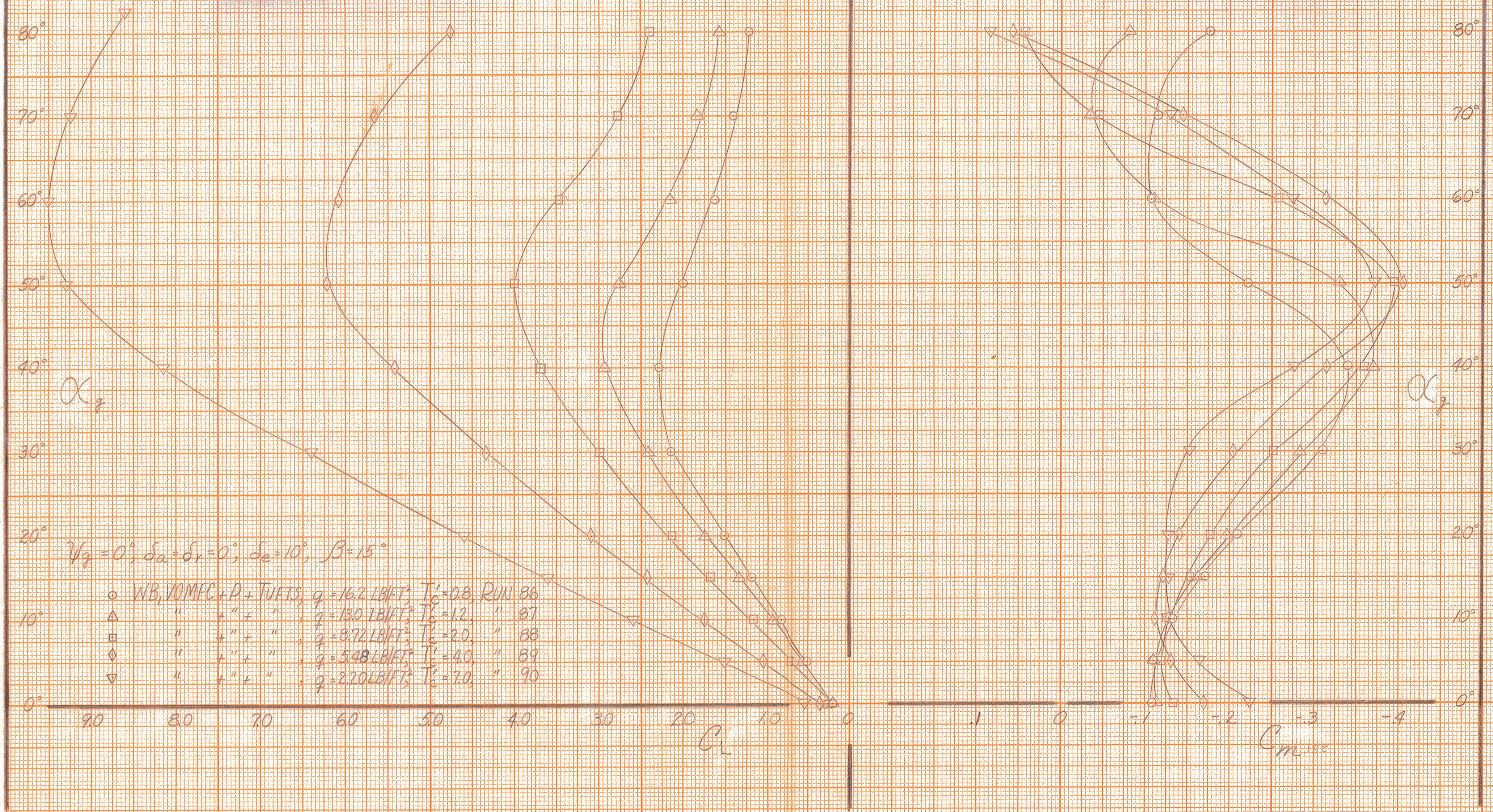
…G. PAT. OFF.
…N MILLIMETER
…AG PAPER
…IN U.S.A.

TEST 96
PLOT 14
○ 86
△ 87
□ 88
◇ 89
▽ 90



TRANSITIONAL FLIGHT, STABILITY AXES
EFFECT OF T_c', $\delta_e = 10°$
C_L, C_m VS. α_g

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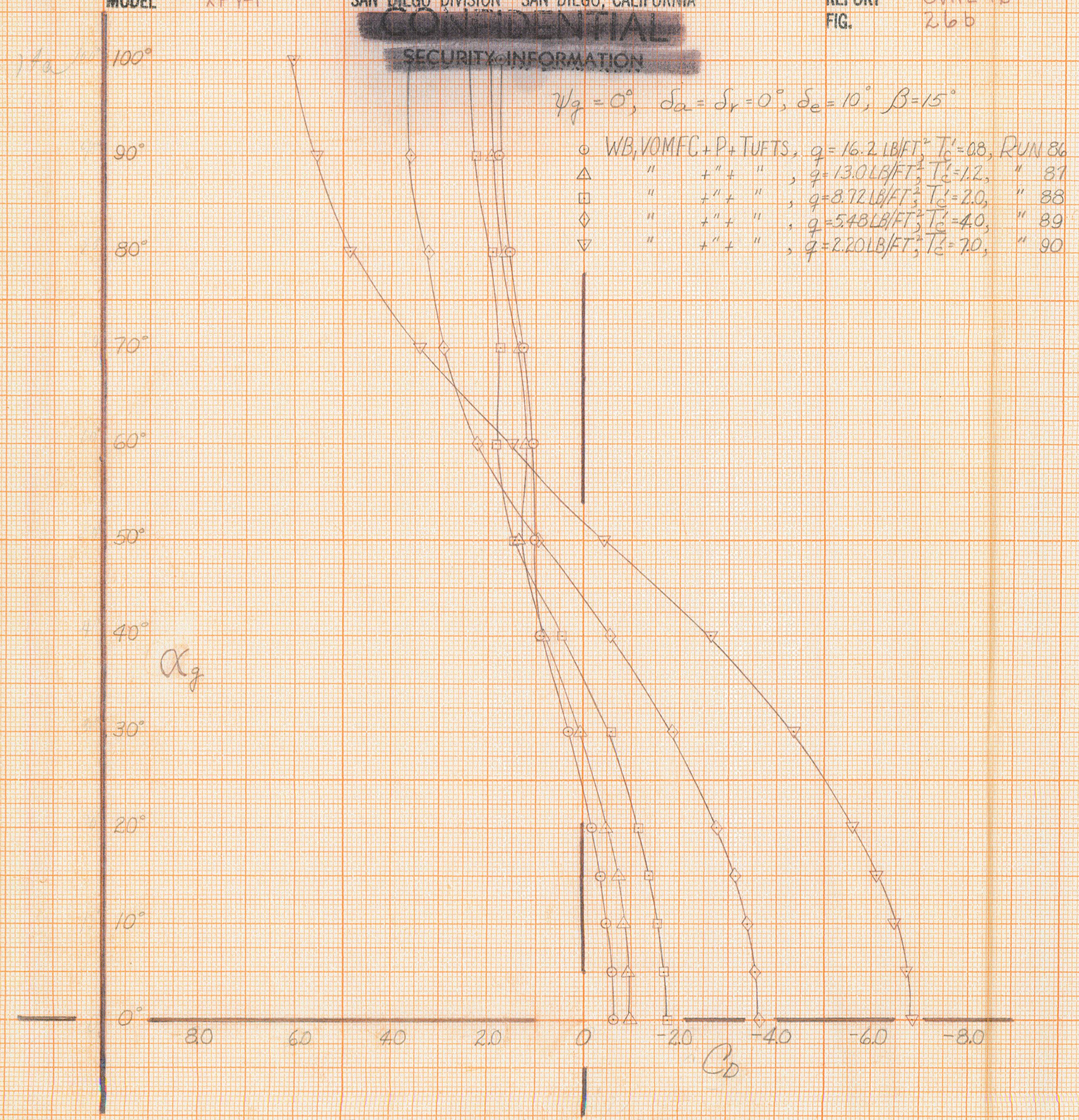
[redacted]



TRANSITIONAL FLIGHT, STABILITY AXES

EFFECT OF T_c', $\delta_e = 10°$

C_D VS. α_g

[redacted]

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PAGE 73
REPORT CVAL96
FIG. 27a

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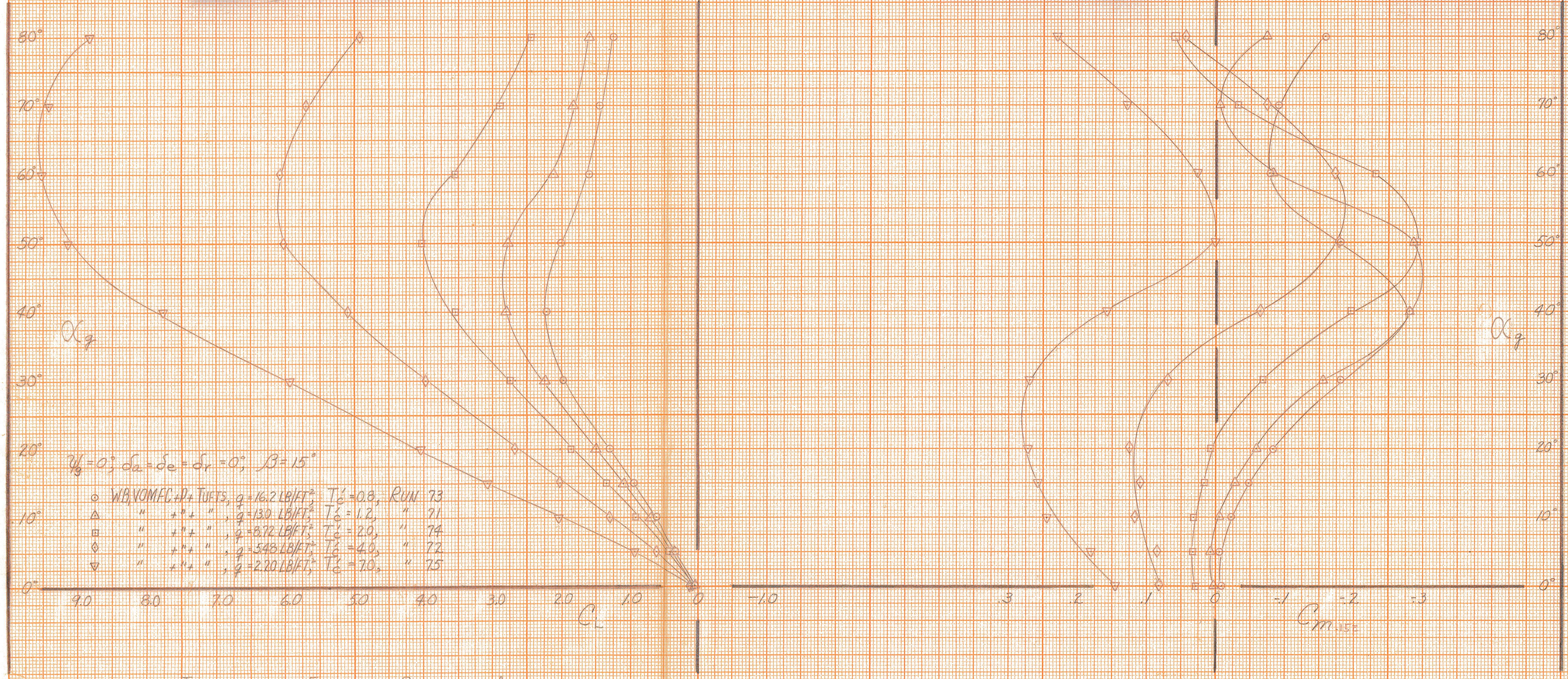
TEST 96

PLOT 13

⊙ 73
△ 71
⊡ 74
◇ 72
▽ 75

SA



TRANSITIONAL FLIGHT, STABILITY AXES
EFFECT OF T'_c, $\delta_e = 0°$
C_L, C_m VS. α_g

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Test 96
Plot 13a
73 ⊙
71 △
74 ⊡
72 ◇
75 ▽

CVAL TEST 96
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PAGE 74
REPORT CVAL 96
FIG. 27b

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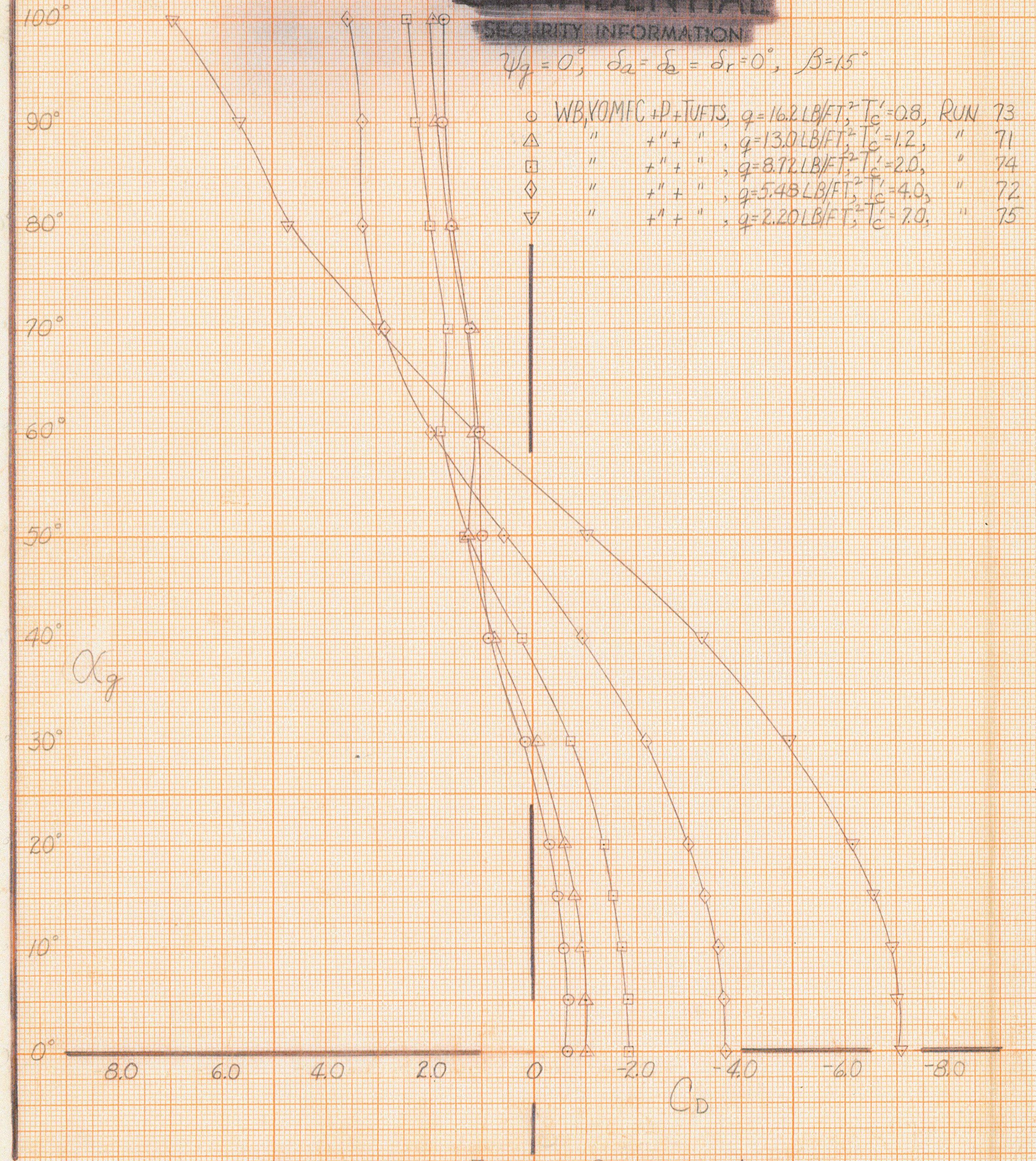

TRANSITIONAL FLIGHT, STABILITY AXES
EFFECT OF T_c', $\delta_e = 0°$
C_D VS α_g

Test 96
Plot 14a
86 ⊙
87 △
88 ⊡
89 ◇
90 ▽

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TEST 96

PLOT 15
⊙ 76
△ 77
⊡ 78
◇ 79
▽ 80

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PAGE 15
REPORT CVAL 96
FIG. 28a

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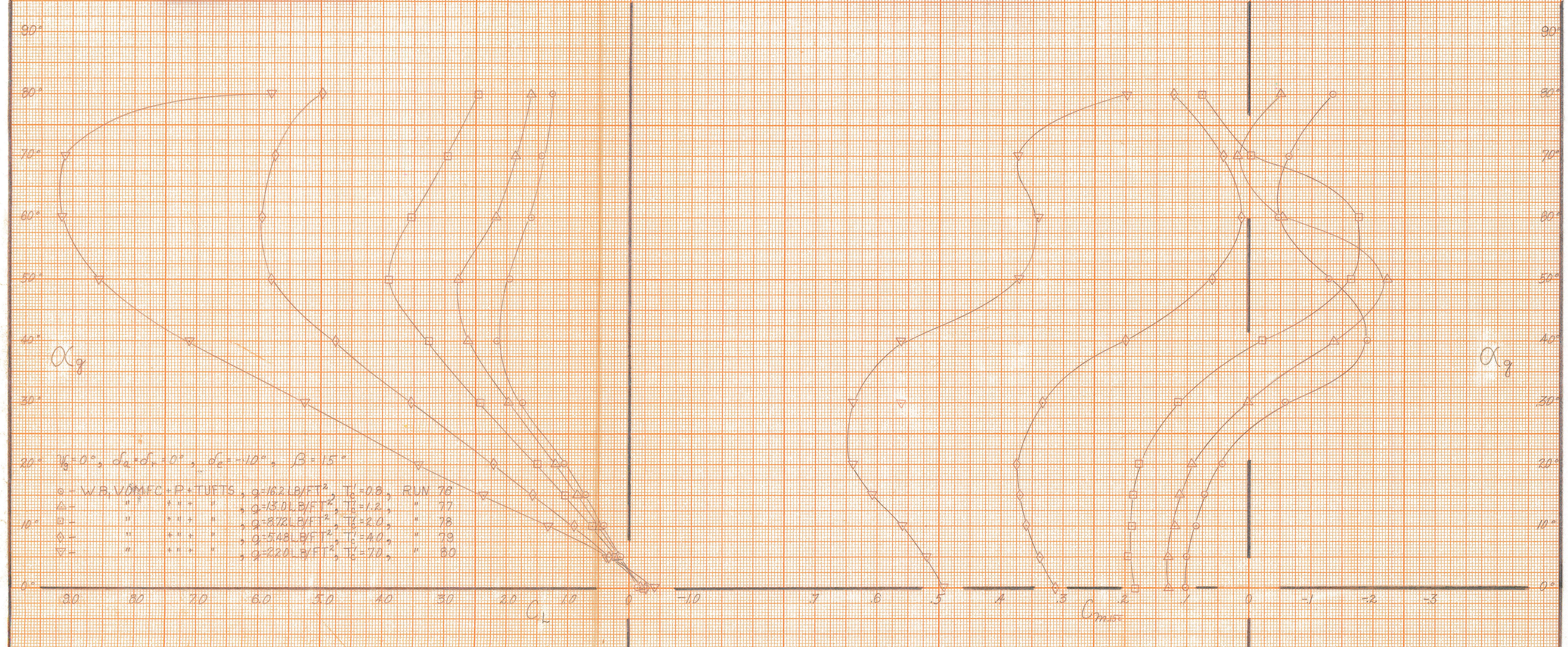

TRANSITIONAL FLIGHT, STABILITY AXES
EFFECT OF T_c', $\delta_e = -10°$
C_L, C_m VS. α_g

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SECURITY INFORMATION

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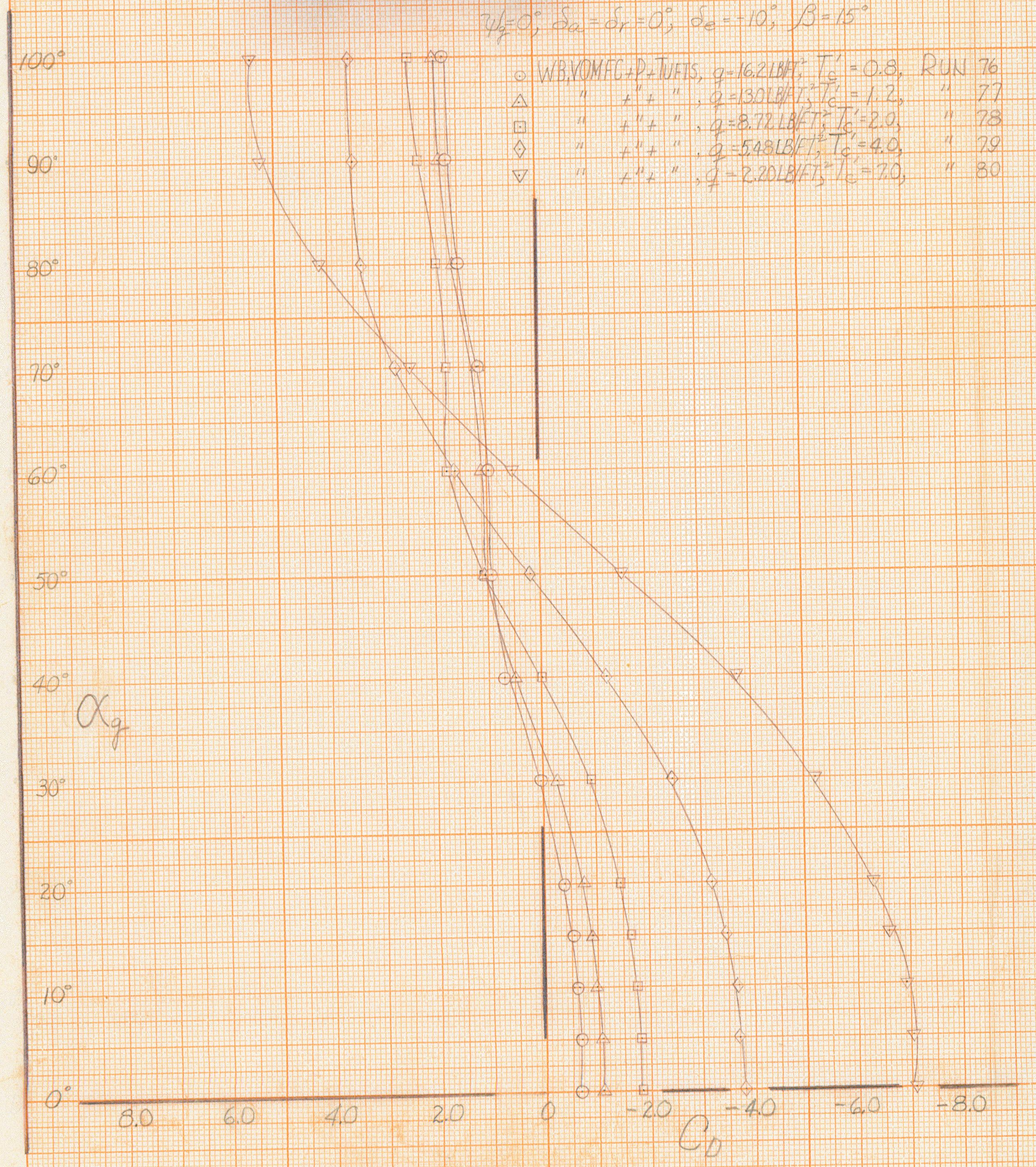
Test 96
Plot 15 a
76 ○
77 △
78 □
79 ◇
80 ▽



TRANSITIONAL FLIGHT, STABILITY AXES
EFFECT OF T_c', $\delta_e = -10°$

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SECURITY INFORMATION

Test 96
Plot 16a
81 ○
82 △
83 □
84 ◇
85 ▽

TEST 96
PLOT 16

○ 81
△ 82
□ 83
◇ 84
▽ 85

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PAGE 77
REPORT CVAL 96
FIG. 29a

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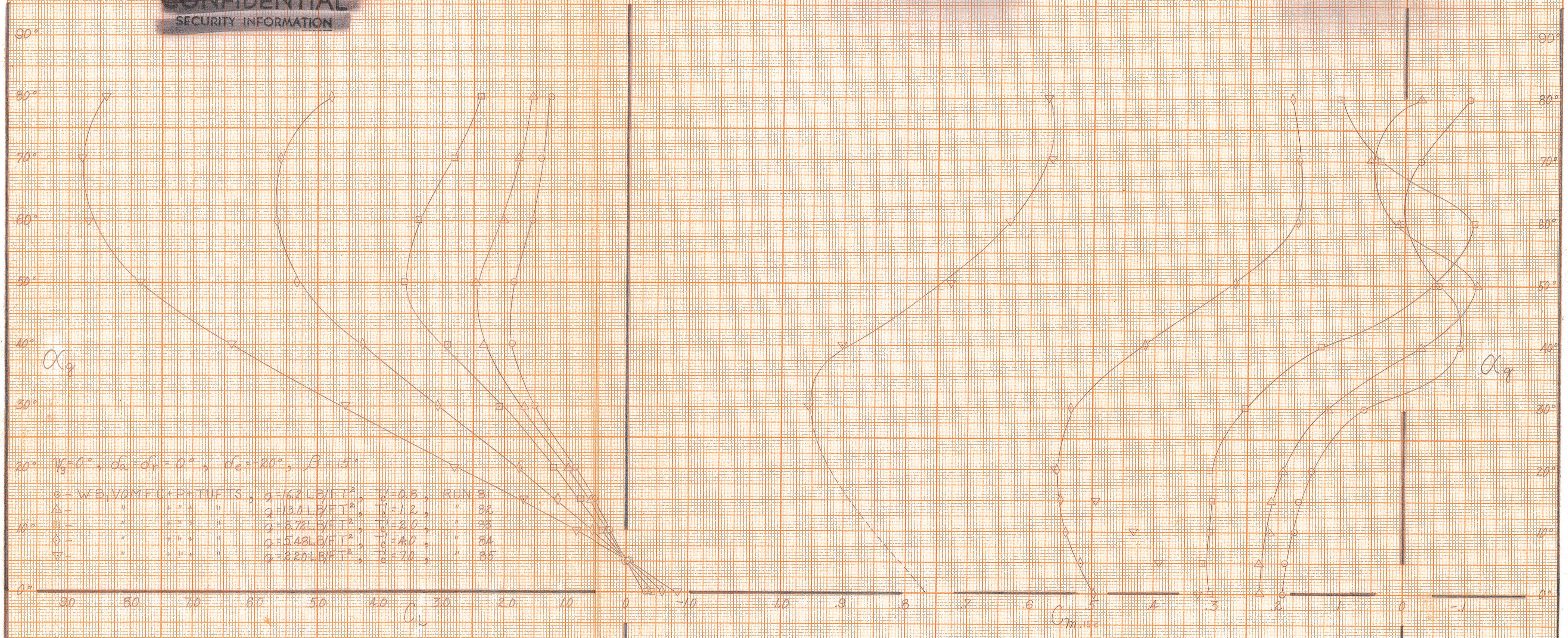

TRANSITIONAL FLIGHT, STABILITY AXES
EFFECT OF T_c', $\delta_e = -20°$
C_L, C_m VS. α_g

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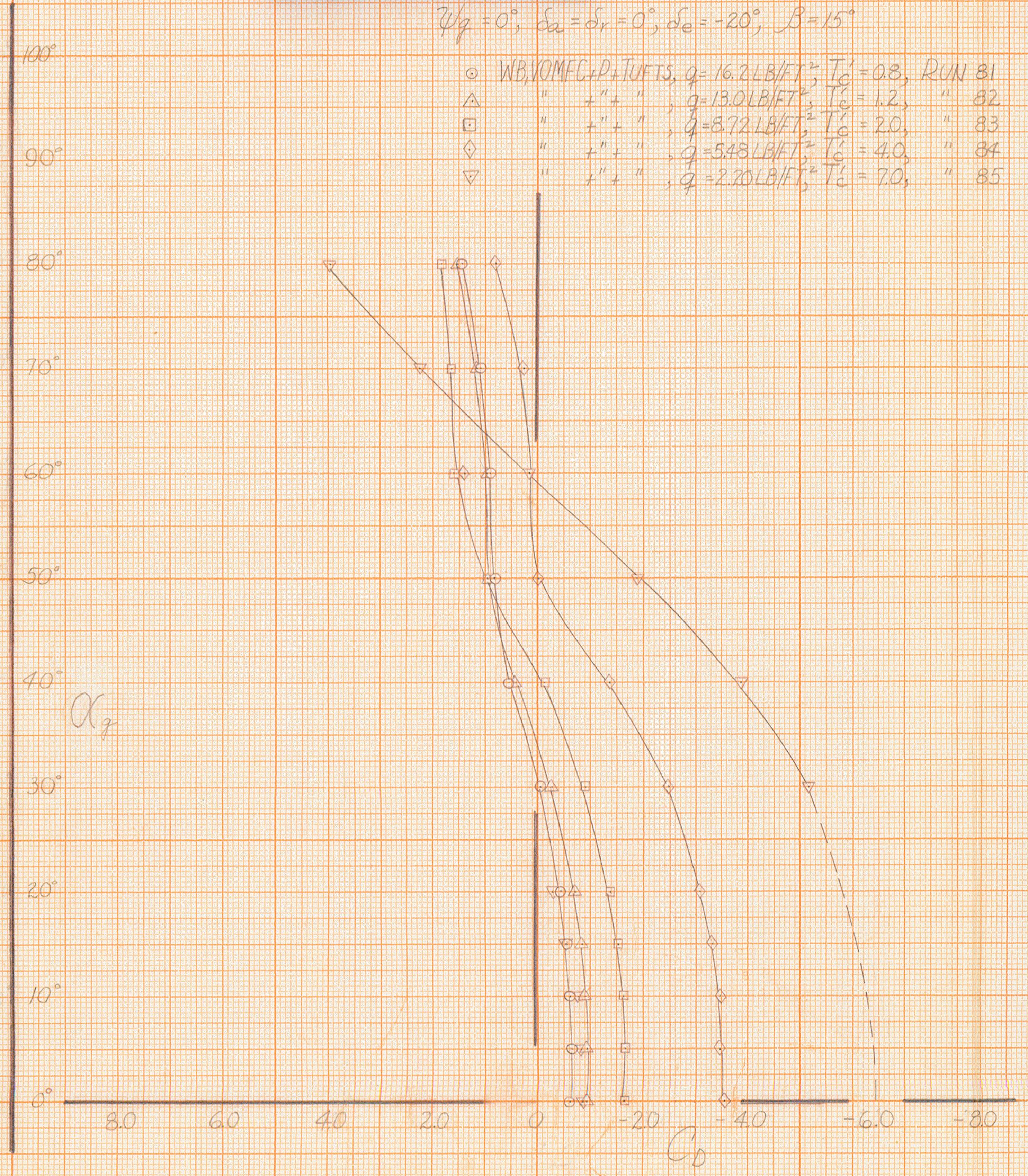
PLOT
16a



TRANSITIONAL FLIGHT, STABILITY AXES

EFFECT OF T_c', $\delta_e = -20°$

C_D vs. α_g

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TEST 96
PLOT 37
73 - ⊙
86 - △
76 - ⊡
81 - ◇

CVAL TEST 96
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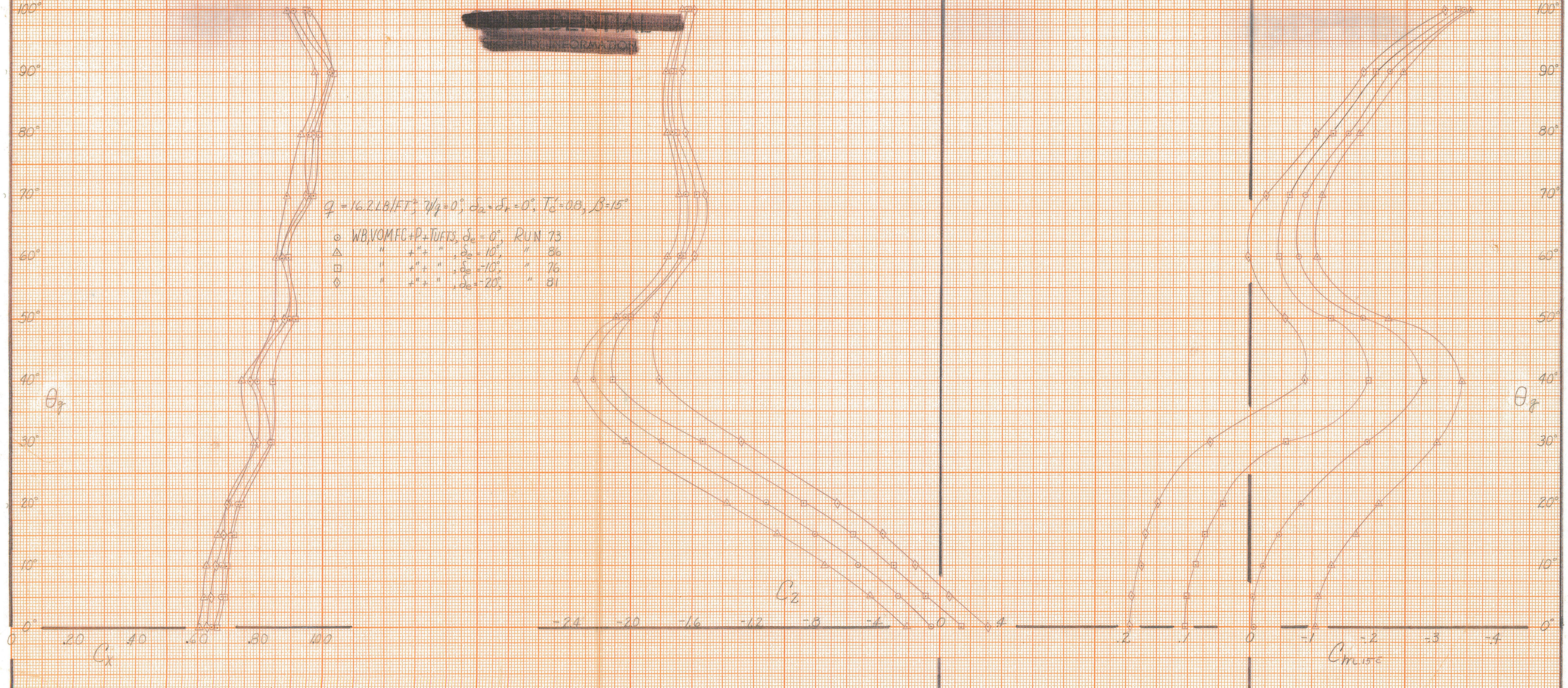
PAGE 19
REPORT CVAL 96
FIG. 30

[redacted]



TRANSITIONAL FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 0.8$
C_x, C_z, C_m, VS. θ_g

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96/
Plot 38

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MODEL XFY-1

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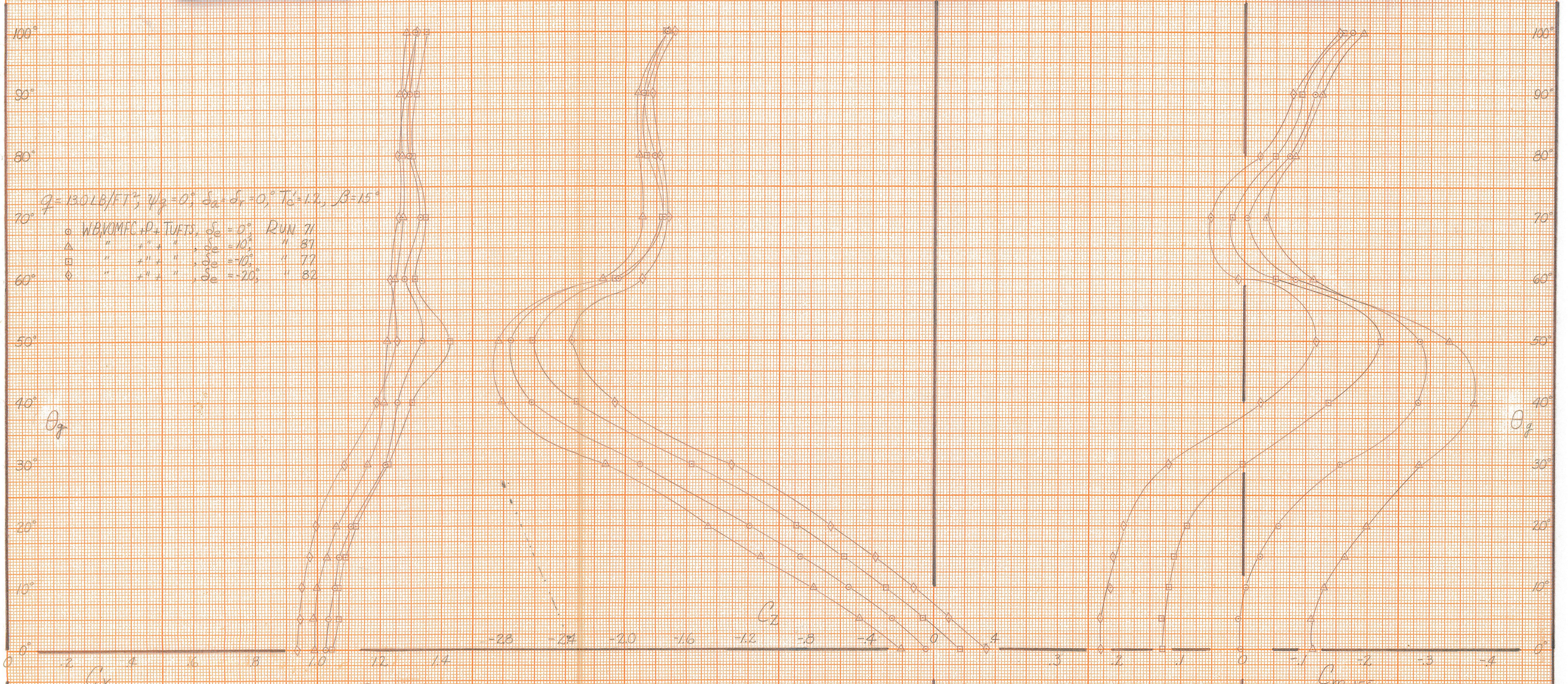
PAGE 80
REPORT CVAL 96
FIG. 31

[redacted]

71 ⊙
87 △
77 ⊡
82 ◇



TRANSITIONAL FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 1.2$
C_x, C_z, C_m VS θ_g

[redacted]

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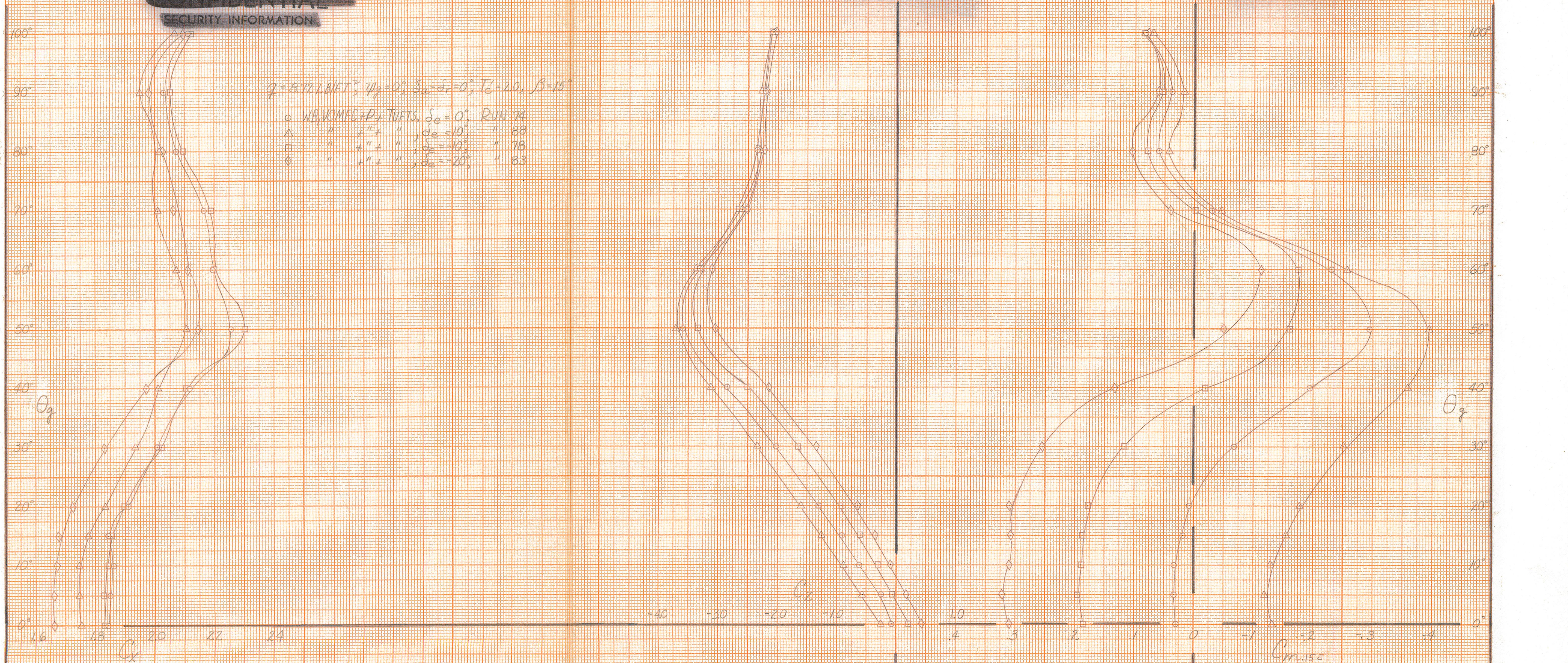
96
PLOT 3º

74 ⊙
88 △
78 □
83 ◇



TRANSITIONAL FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 2.0$
C_x, C_z, C_m VS. θ_g

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PAGE 82
REPORT CVAL 96
FIG. 33

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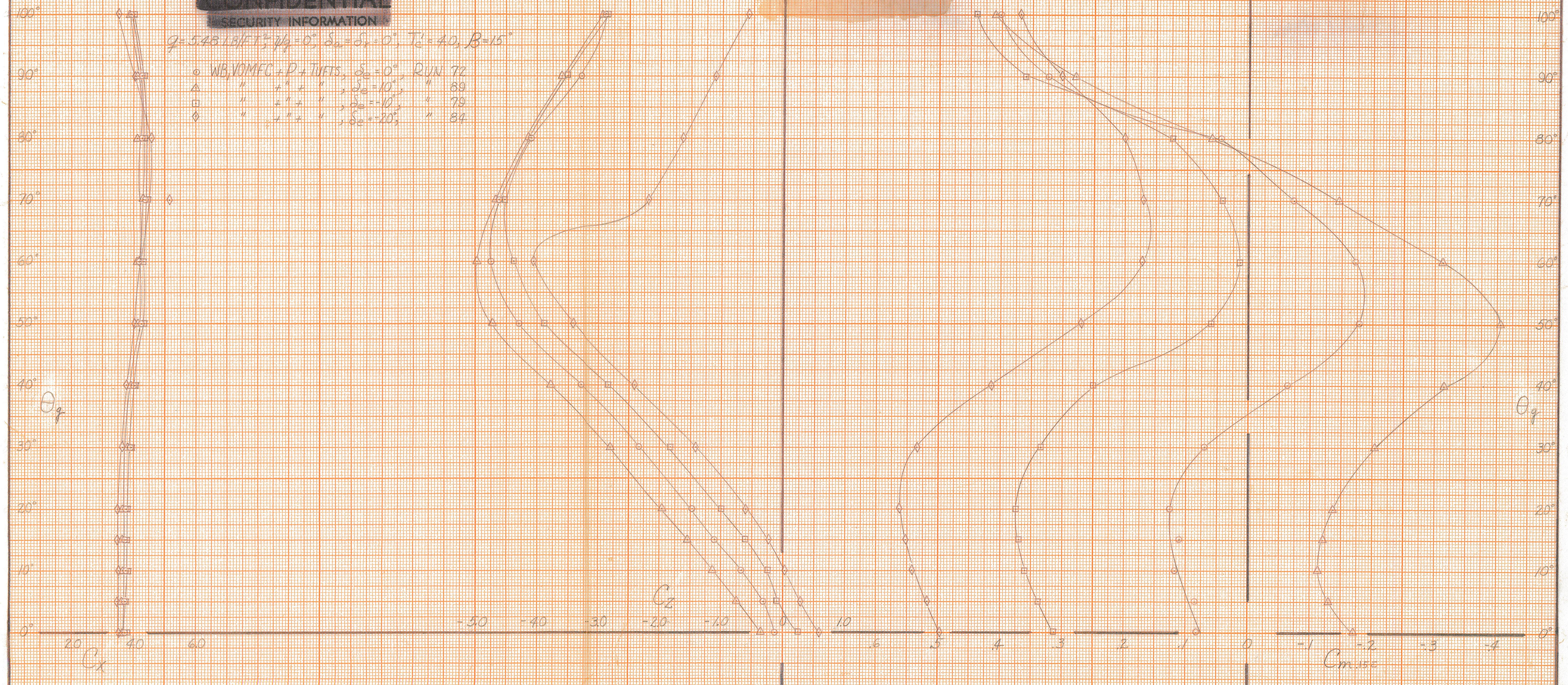
96
PLOT 40
72 - ○
89 - △
79 - □
84 - ◇



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TRANSITIONAL FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 4.0$
C_x, C_z, C_m VS. θ_q

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PAGE 83
REPORT CVAL 96
FIG. 34

96
PLOT 41
75-○
90-△
80-□
85-◇

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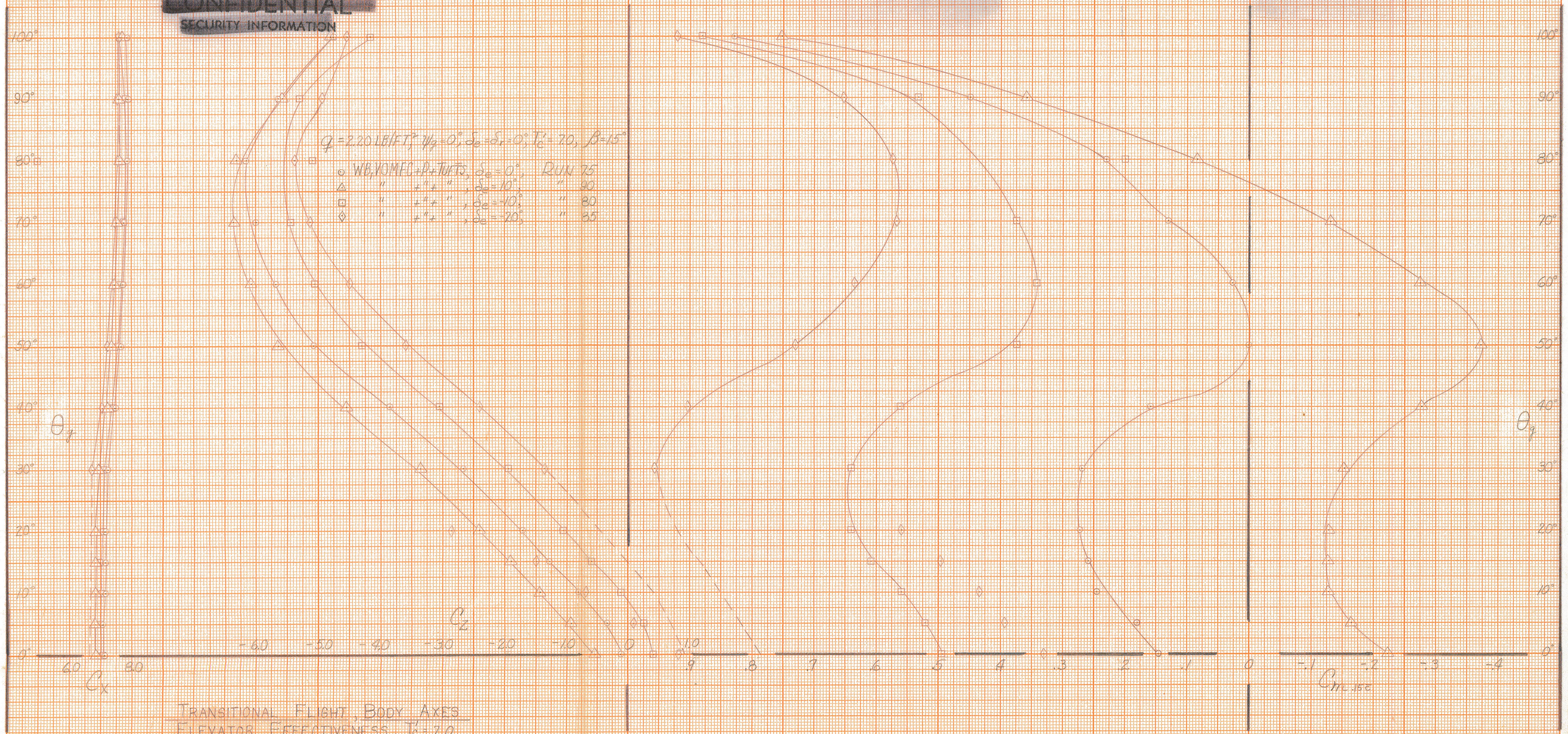

TRANSITIONAL FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, $T_c' = 7.0$
C_x, C_z, C_m VS. θ_g

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PAGE 84
REPORT CVAL 96
FIG. 35

96

PLOT 34
⊙ - 86
△ - 87
⊡ - 88
◇ - 89
▽ - 90

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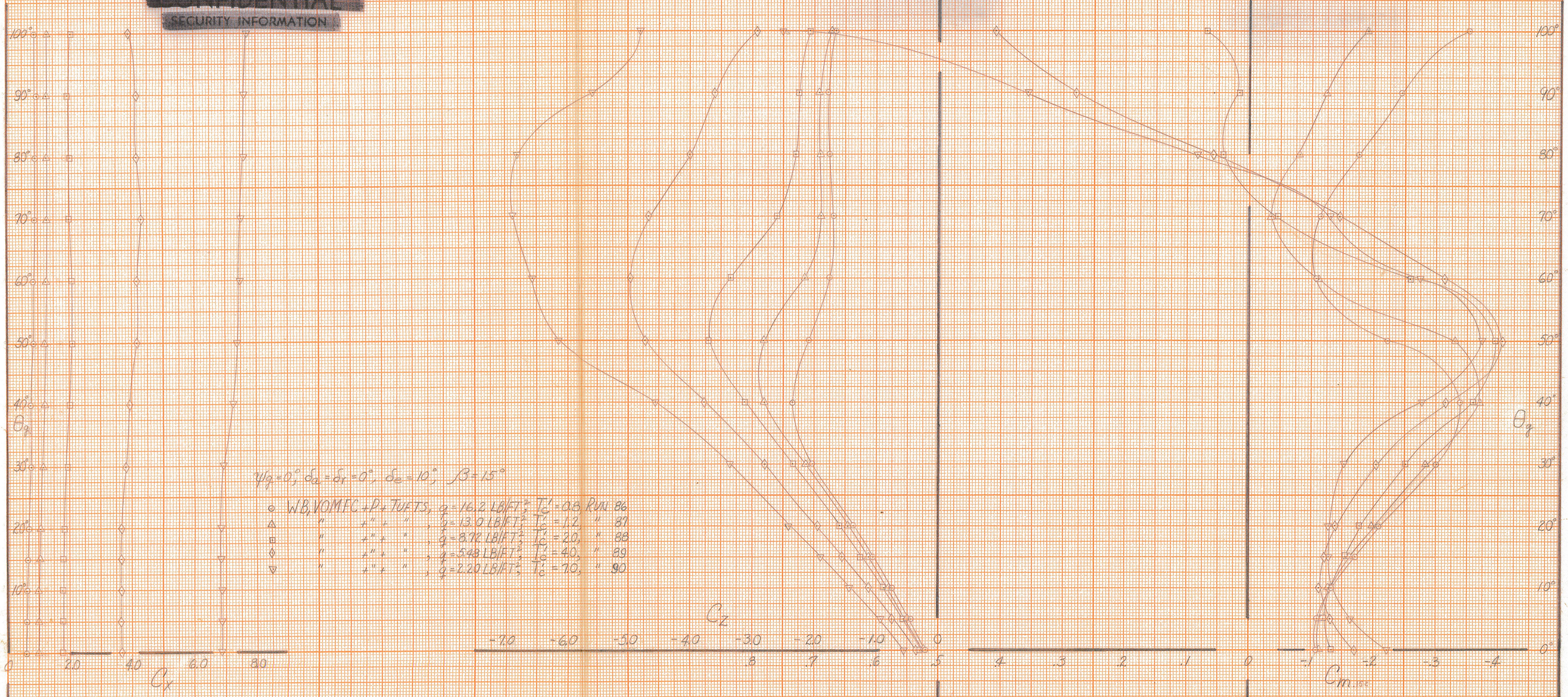

TRANSITIONAL FLIGHT, BODY AXES

EFFECT OF T_c', $\delta_e = 10°$

C_x, C_z, C_m vs θ_g

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TEST 96
PLOT 38
73 - ⊙
71 - △
74 - ⊡
72 - ◇
75 - ▽

CVAL TEST 96
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PAGE 85
REPORT CVAL 96
FIG. 36

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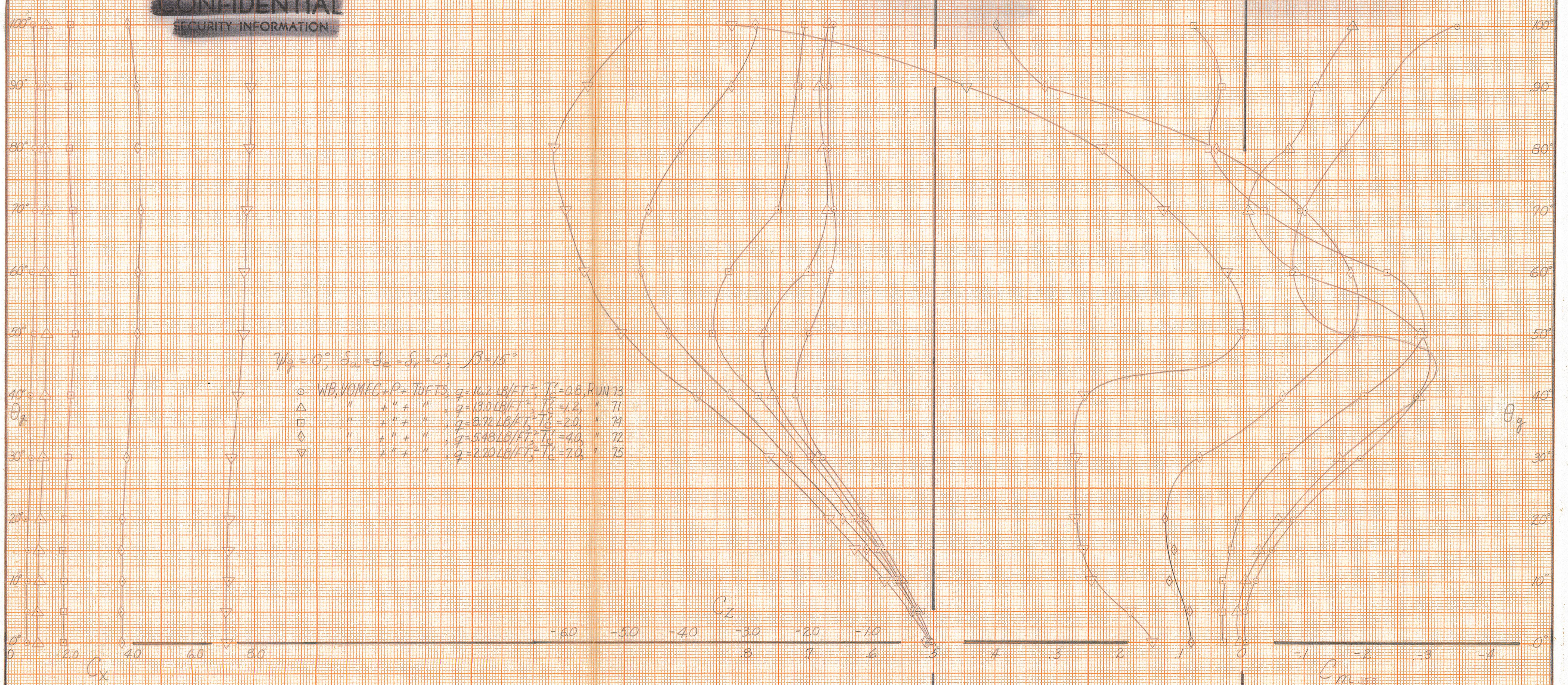

TRANSITIONAL FLIGHT, BODY AXES

EFFECT OF T_c', $\delta_e = 0°$

C_X, C_Z, C_m vs θ_g

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Test 96
PLOT 35

CVAL TEST 96
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PAGE 86
REPORT CVAL 96
FIG. 37

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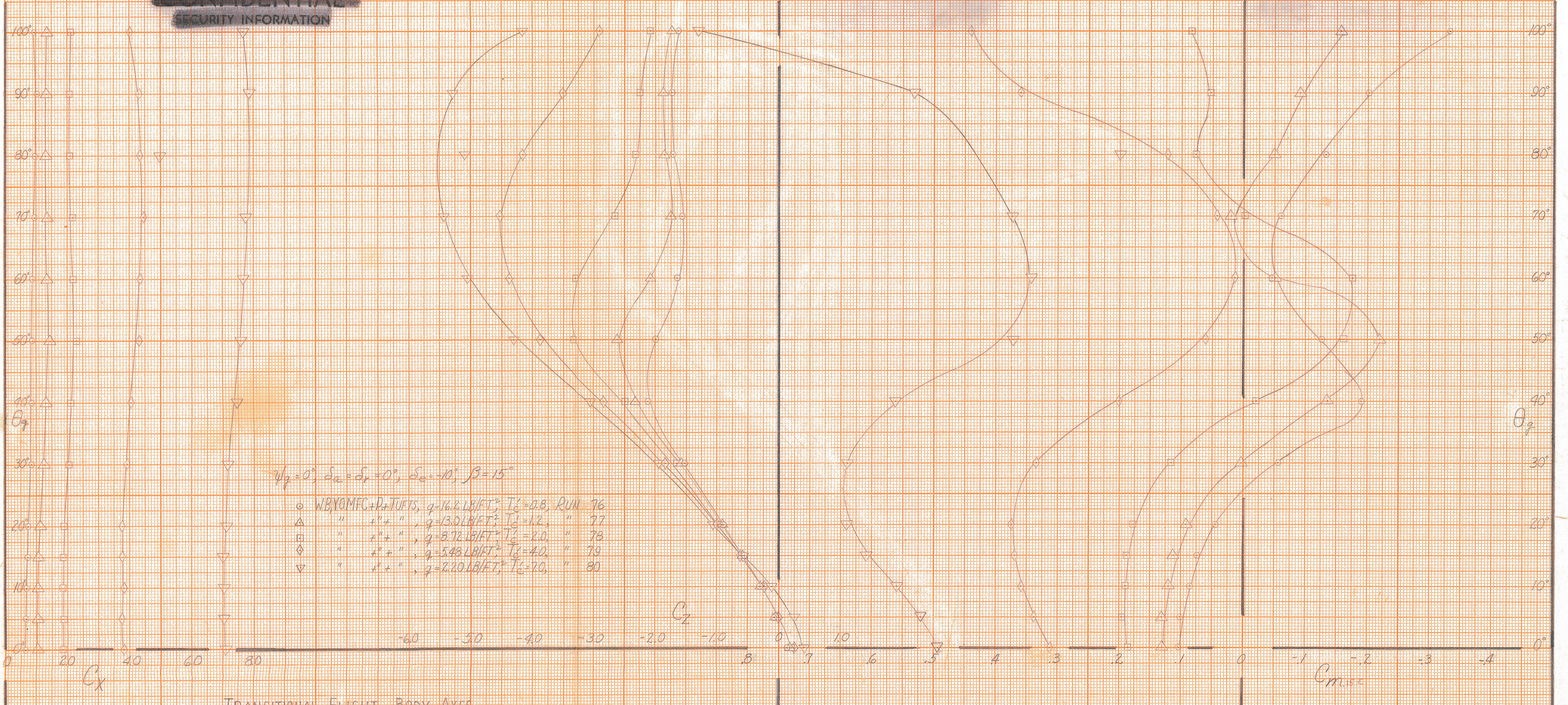
76 ⊙
77 △
78 ⊡
79 ◇
80 ▽



$\psi_q = 0°$; $\delta_a = \delta_r = 0°$; $\delta_e = -10°$; $\beta = 15°$

⊙	W.B, YOMFC + P. + TUFTS,	$q = 16.2\ LB/FT^2$;	$T_c' = 0.8$,	RUN 76
△	" + " + ",	$q = 13.0\ LB/FT^2$;	$T_c' = 1.2$,	" 77
⊡	" + " + ",	$q = 8.72\ LB/FT^2$;	$T_c' = 2.0$,	" 78
◇	" + " + ",	$q = 5.48\ LB/FT^2$;	$T_c' = 4.0$,	" 79
▽	" + " + ",	$q = 2.20\ LB/FT^2$;	$T_c' = 7.0$,	" 80

TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF T_c', $\delta_e = -10°$
C_X, C_Z, C_m vs θ_q

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96
PLOT 36

81 ○
82 △
83 ⊡
84 ◇
85 ▽

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PAGE 87
REPORT CVAL 96
FIG. 38

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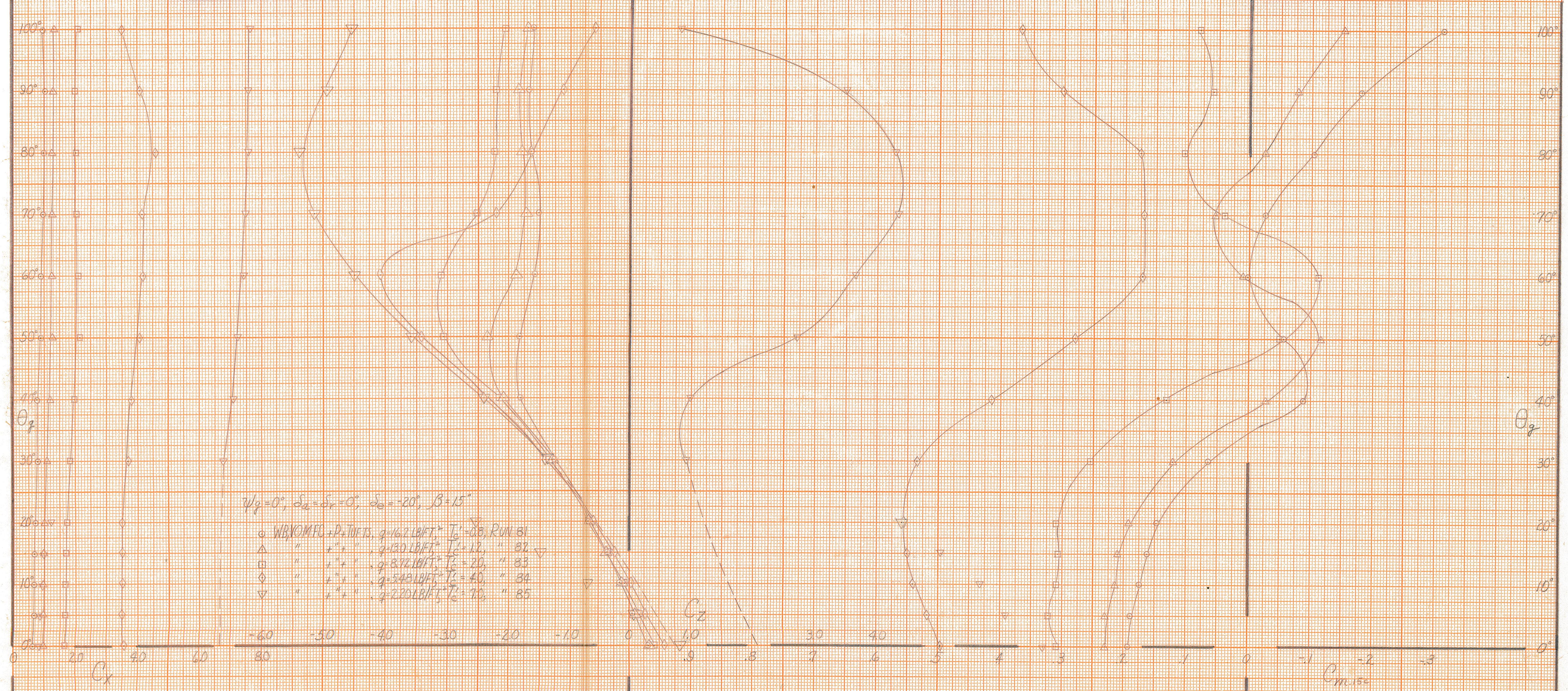

TRANSITIONAL FLIGHT, BODY AXES

EFFECT OF T'c; δe = -20°

Cx, Cz, Cm vs θg

[redacted]

TEST 96
# 9
○ 73
△ 71
□ 74
◇ 72
▽ 75
ơ 103
△́ 104
□́ 105
◇́ 106
▽́ 107

CVAL TEST 96
MODEL XFY-1

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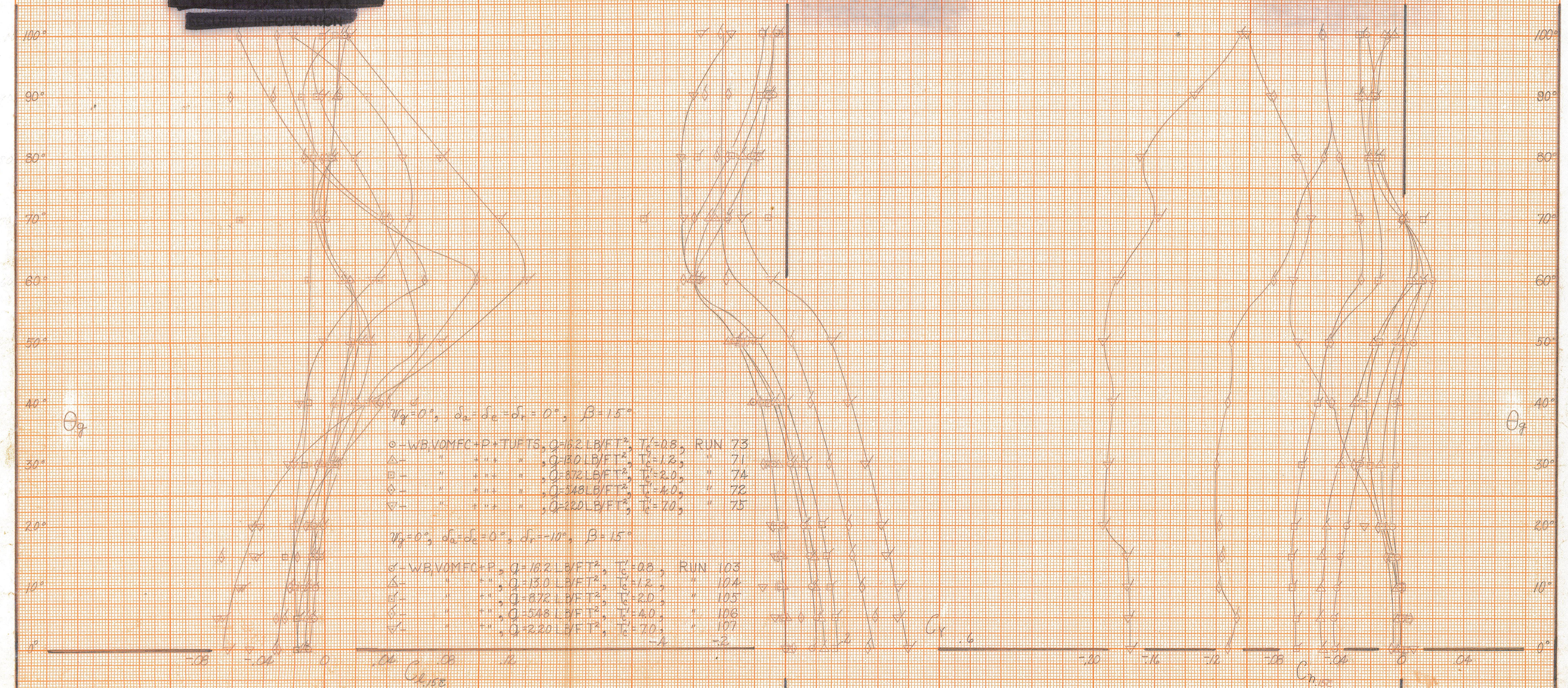
PAGE 88
REPORT CVAL 96
FIG. 39

[redacted]



TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF T_c'
ON RUDDER CONTROL, $\psi_g = 0°$
C_l, C_Y, C_n VS. θ_g

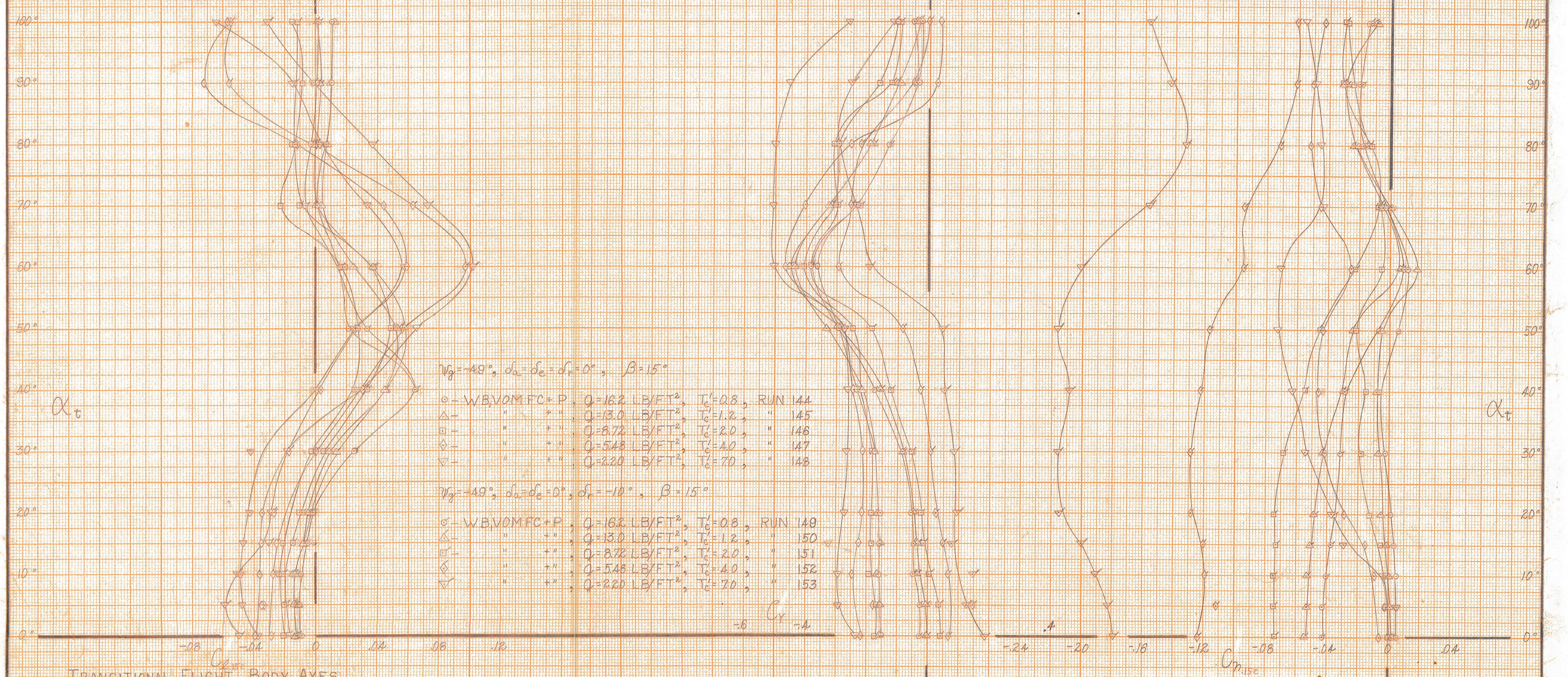
[redacted]

KEUFFEL
NEW

[redacted]

TEST 96
PLOT 10

144 ⊙
145 △
146 ⊡
147 ◇
148 ▽
149 ⊙
150 △
151 ⊡
152 ◇
153 ▽



TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF T_c'
ON RUDDER CONTROL, $\psi_g = -4.9°$
C_l, C_Y, C_n VS. α_t

[redacted]

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Test 96
Plot 11
108C ○
109A △
110A □
111A ◇
112A ▽
113A ○
114A △
115A □
116A ◇
117A ▽

CVAL TEST 96
MODEL XFY-1

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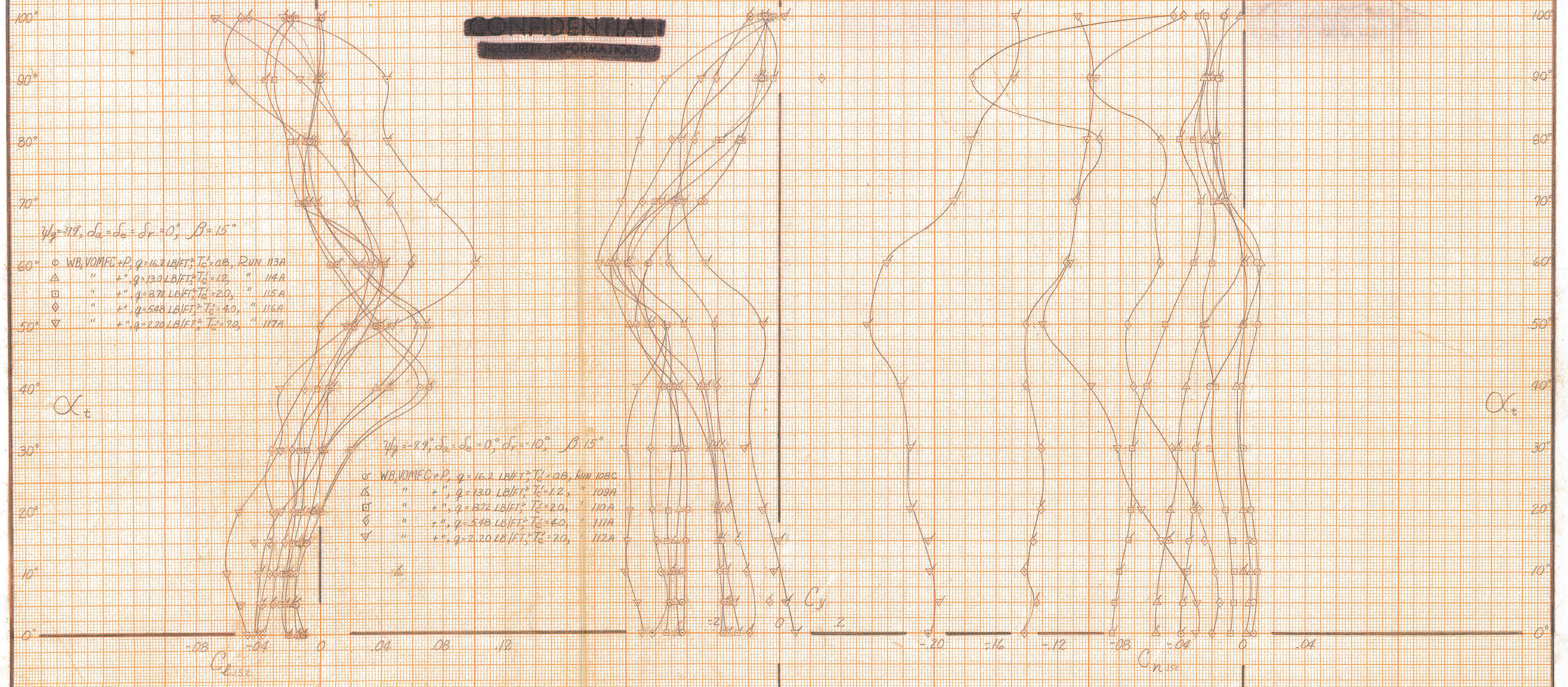
PAGE 90
REPORT CVAL 96
FIG. 41

[redacted]



TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF T_c'
ON RUDDER CONTROL, $\psi_g = -9.9°$
C_l, C_Y, C_n VS. α_t

[redacted]

test 96
Plot 50

73 ⊙
144 △
108c ⊡
74 ◇
146 ▽
110A ◁
75 ▷
148 ⊙
112A △

CVAL TEST 96
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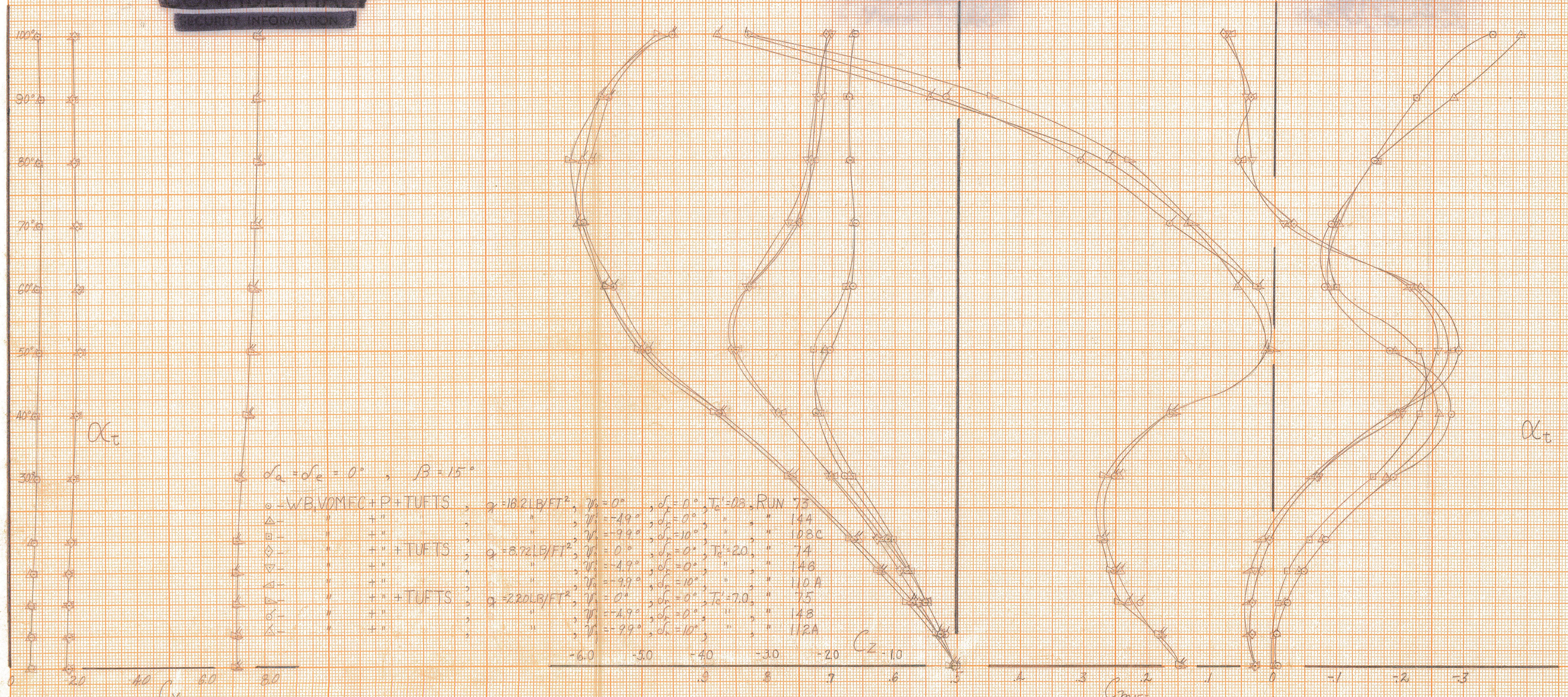

TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF YAW AND RUDDER DEFLECTION
ON LONGITUDINAL CHARACTERISTICS
C_x, C_z, C_m vs α_t

[redacted]

TEST 96
PLOT 46
C_l C_Y, C_N vs α

⊙ 86
△ 88
⊡ 90
ơ 100
⚠ 101
⊡̸ 102

CVAL TEST 96
MODEL XFY-1

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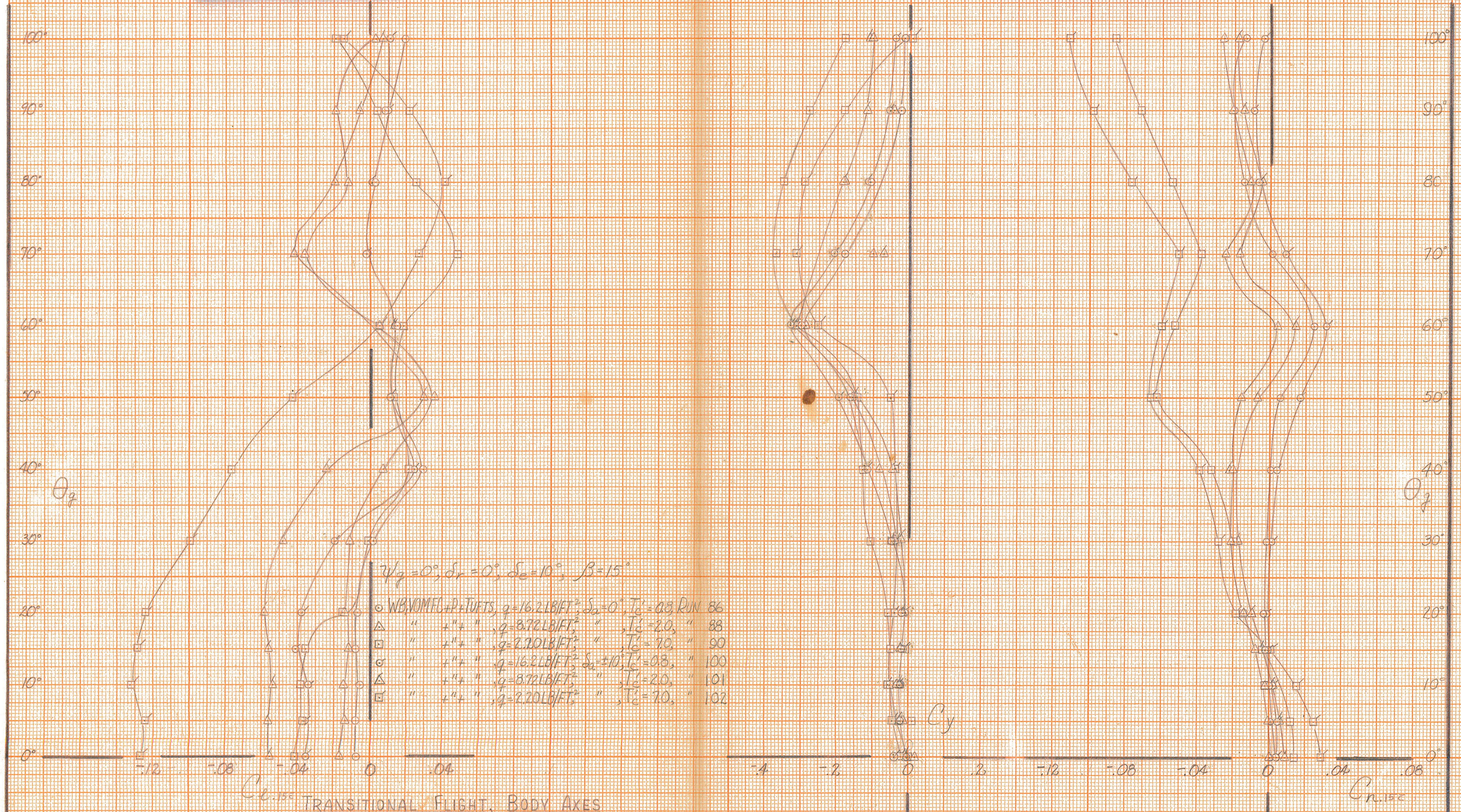
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 92
REPORT CVAL 96
FIG. 43

[redacted]



TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF T_c'
ON AILERON CONTROL, $\delta_e = 10°$
C_l, C_y, C_n vs θ_q

[redacted]

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PLOT #44

- ⊙ 73
- △ 74
- ⊡ 75
- ⊙ 91
- △ 92
- ⊡ 93

CVAL TEST 96
MODEL XFY-1

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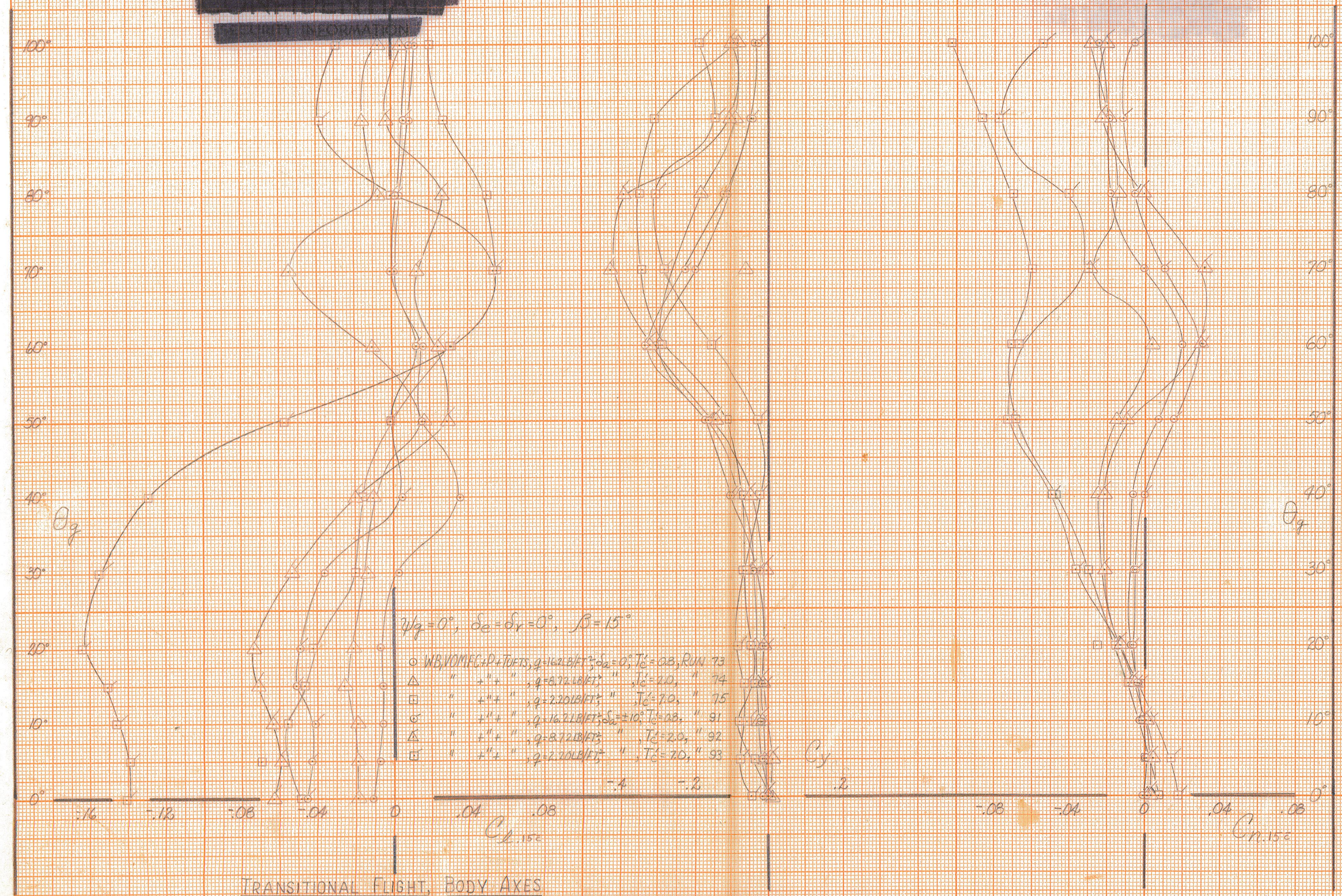
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 93
REPORT CVAL
FIG. 44

[redacted]



TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF T_c'
ON AILERON CONTROL, $\delta_e = 0°$
C_ℓ, C_y, C_n vs θ_g

[redacted]

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Test 96

Plot 45

76 ⊙
78 △
80 ⊡
97 ⊙
98 △
99 ⊡

CVAL TEST 96
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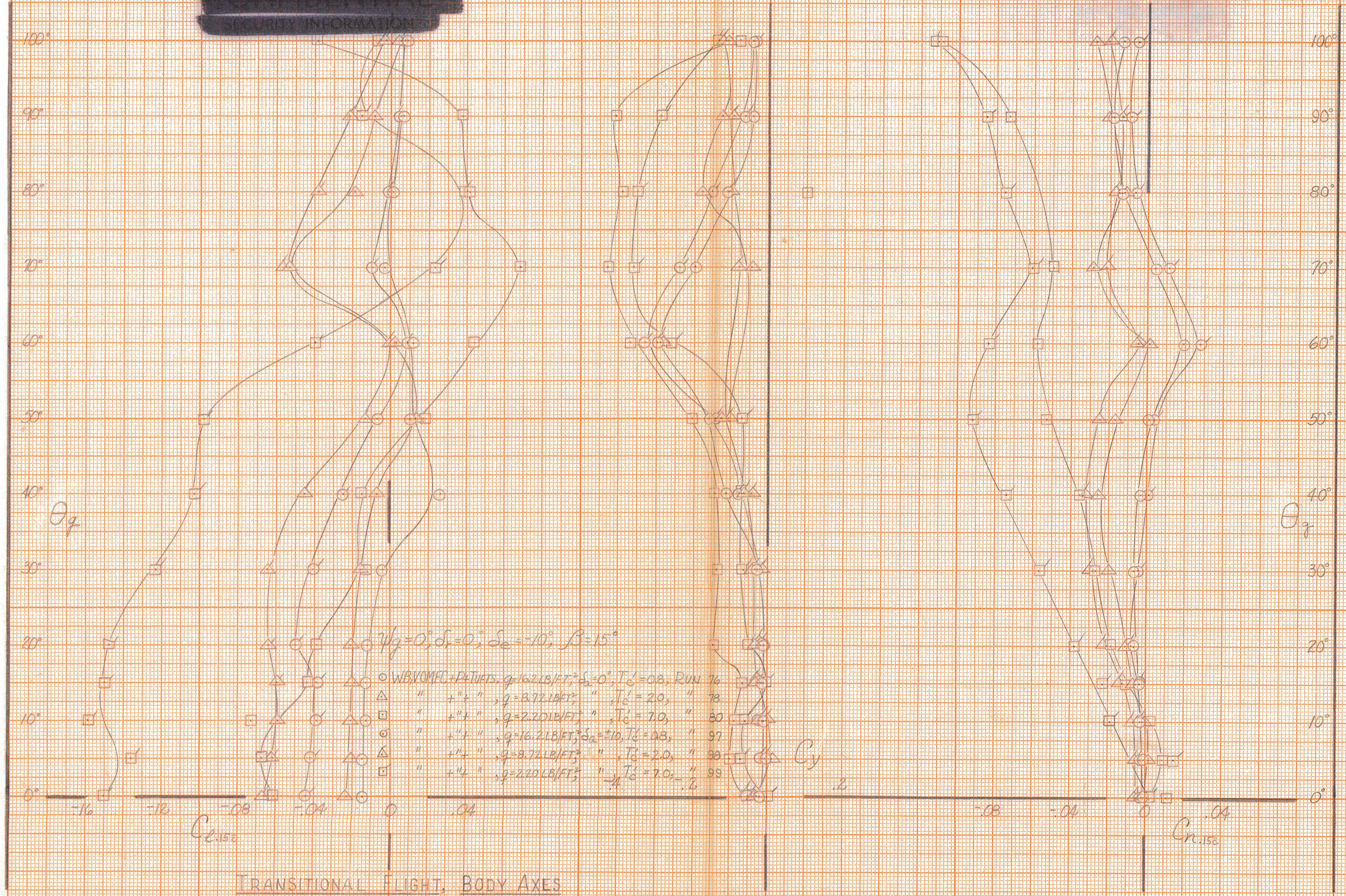
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 94
REPORT CVAL 96
FIG. 45

[redacted]



TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF T_c'
ON AILERON CONTROL, $\delta_e = -10°$
C_l, C_y, C_n vs θ_g

[redacted]

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10X10 FAG PAPER
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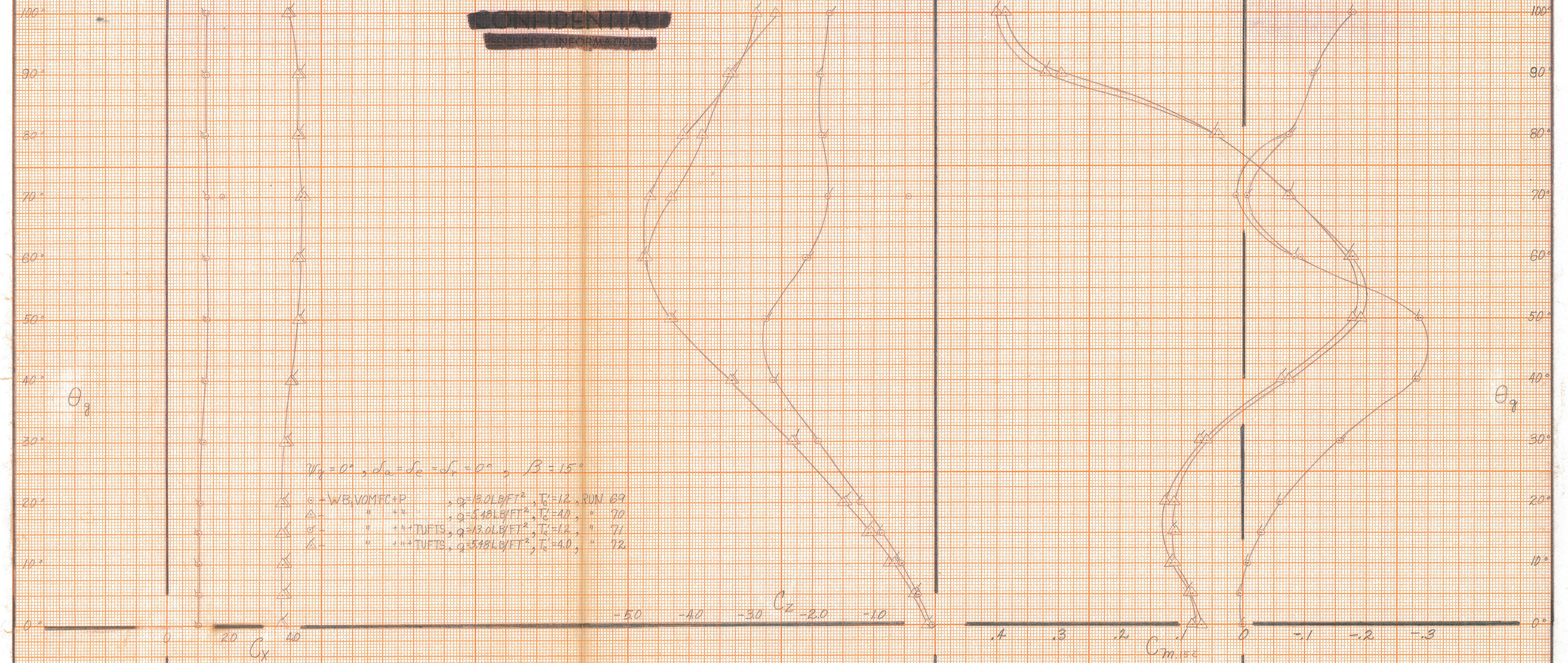
96
PLOT 55

69 ⊙
70 △
71 ⌀
72 ⚠

CVAL TEST	96	CONSOLIDATED VULTEE AIRCRAFT CORPORATION	PAGE 95
MODEL	XFY-1	SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA	REPORT CVAL 96
			FIG. 46

[redacted]

[redacted]



TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF TUFTS, $\psi_q = 0°$
C_x, C_z, C_m VS θ_q

[redacted]

[redacted]

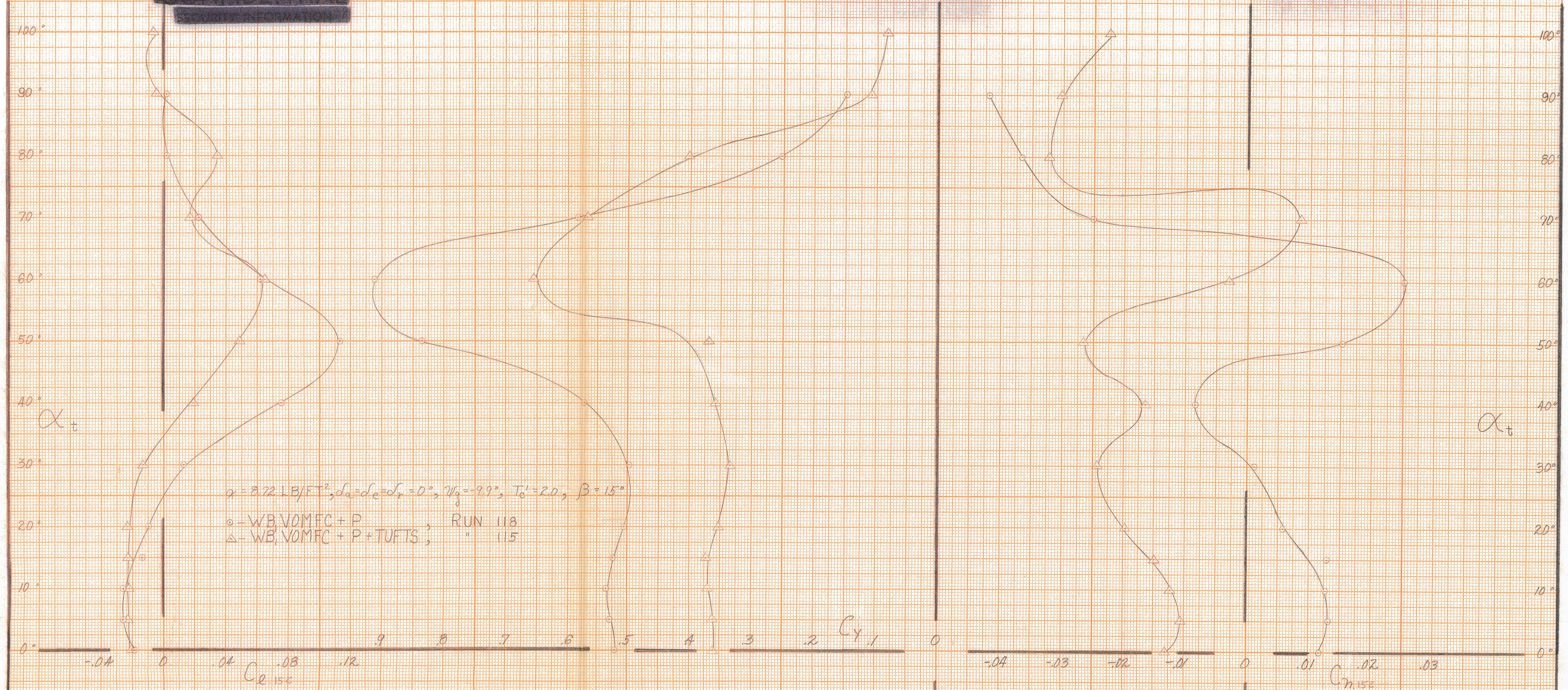
Test 96
Plot 54
118 ⊙
115 Δ

CVAL TEST 96
MODEL XFY-1

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 96
REPORT CVAL 96
FIG. 47

[redacted]



TRANSITIONAL FLIGHT, BODY AXES
EFFECT OF TUFTS, $\psi_g = -9.9°$
C_ℓ, C_Y, C_n VS. α_t

[redacted]

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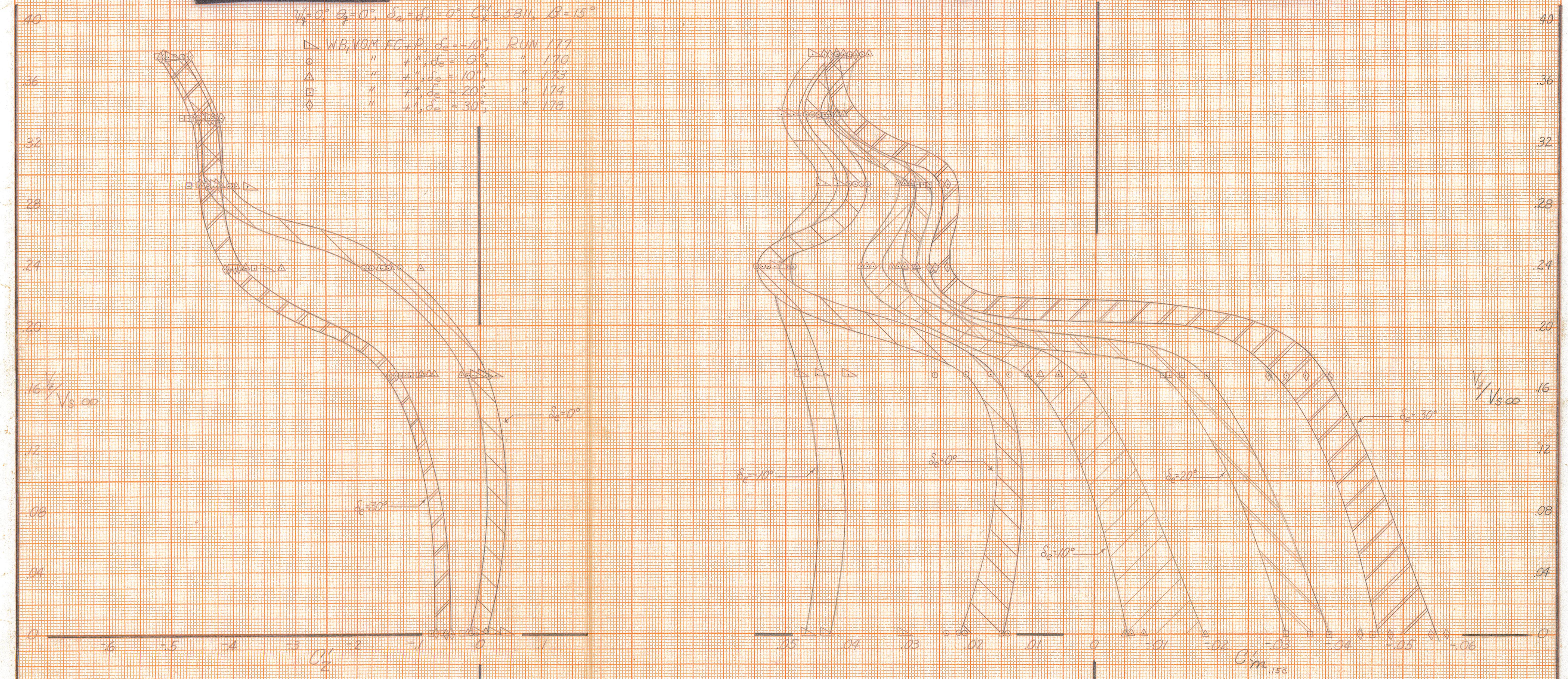
TEST 96
PLOT 3a

177 ◺
170 ⊙
173 △
174 □
178 ◇

[redacted]

$\psi_q = 0°$; $\theta_q = 0°$; $\delta_a = \delta_r = 0°$; $C'_x = .5811$, $\beta = 15°$



HOVERING FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, FREE AIR, $\theta_q = 0°$
C'_z, C'_m vs $V_z/V_{s\infty}$

[redacted]

TEST 96

PLOT 3b

CVAL TEST 96
MODEL XFY-1

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 98
REPORT CVAL 96
FIG. 48 b

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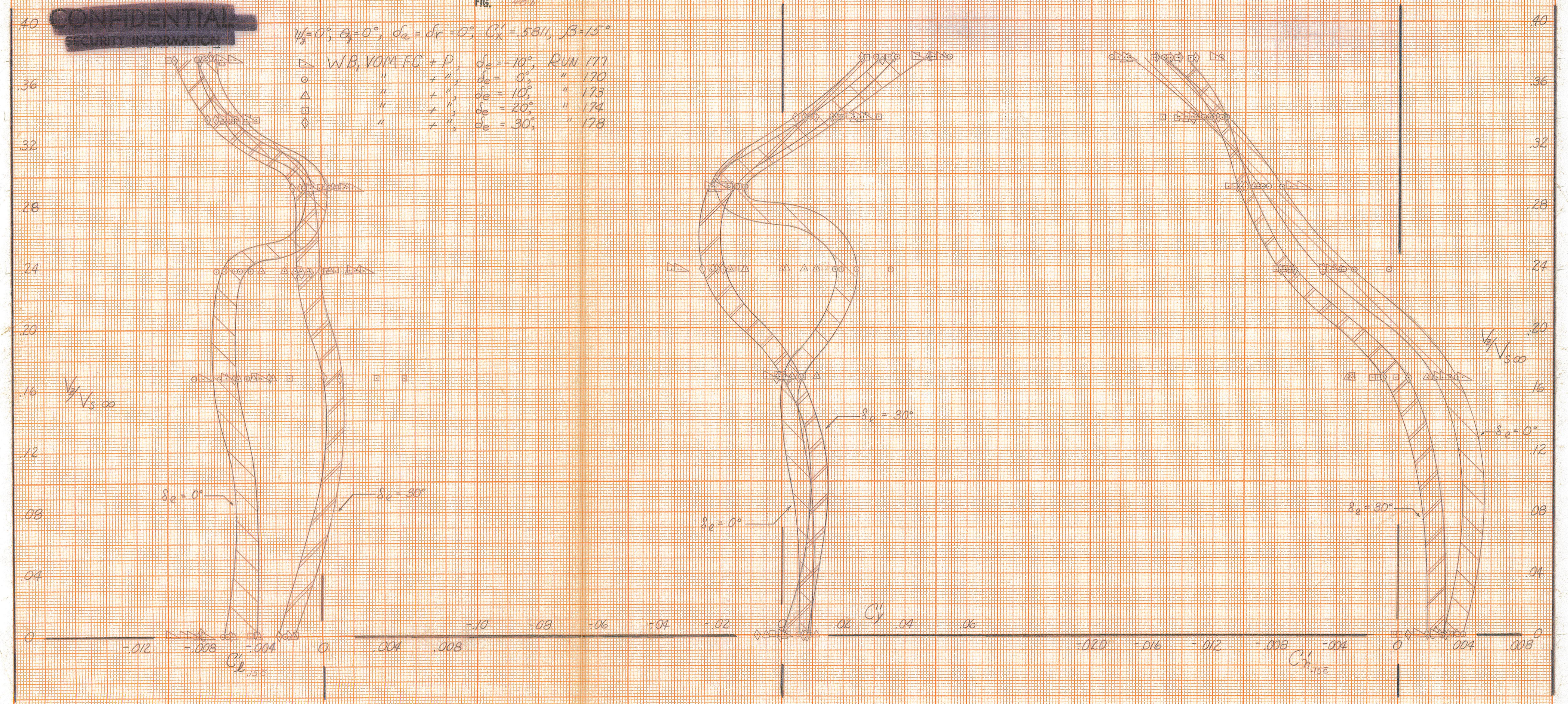
177 ◺
170 ⊙
173 △
174 ⊡
178 ◇



Hovering Flight, Body Axes
Elevator Effectiveness, Free Air, $\theta_g = 0°$
C_l', C_Y', C_n' vs $V_z/V_{s\infty}$

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MADE IN U.S.A.

Test 96

Plot 4a

176 ▷
171 ○
172 △
175 □
179 ◇

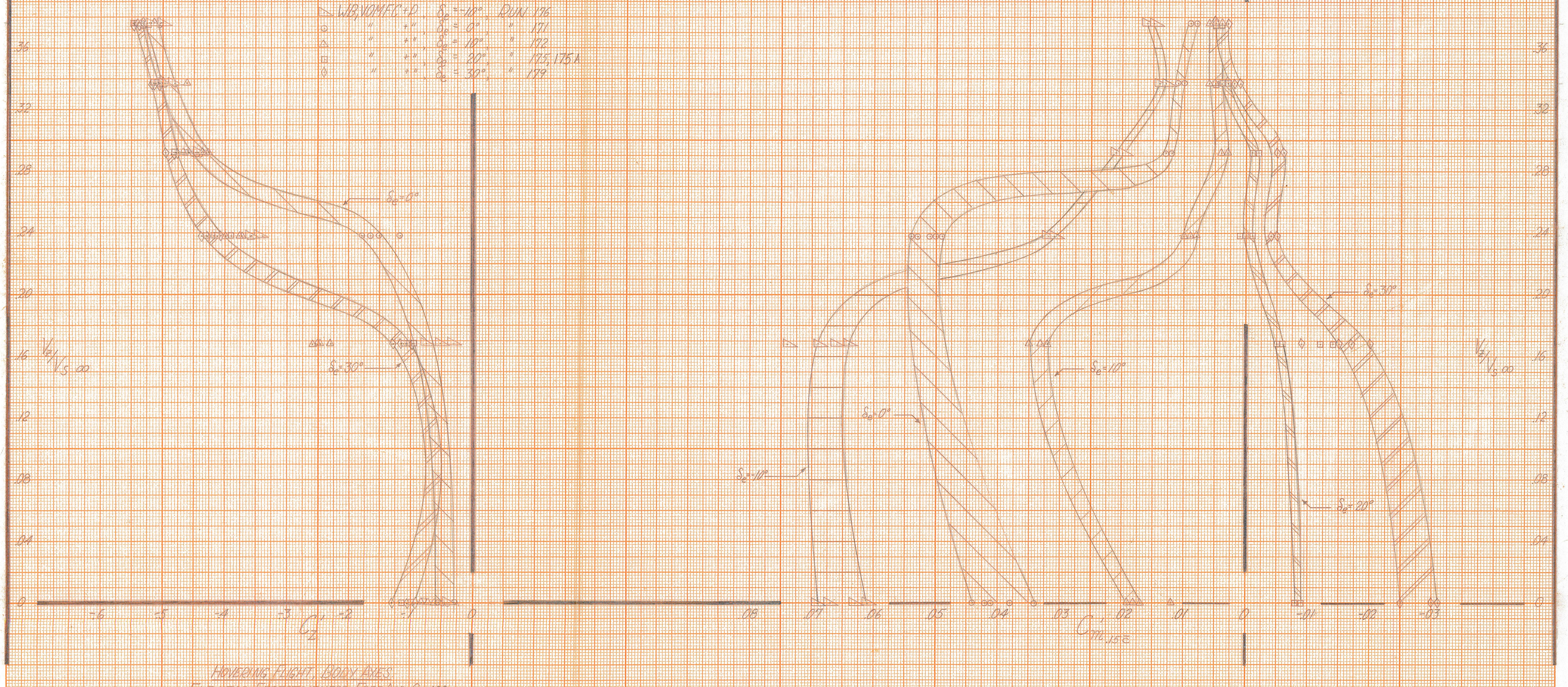
CVAL TEST 96
MODEL XFY-1

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 99
REPORT CVAL 96
FIG. 49a

[redacted]

$\psi_q = 0°$; $\theta_q = -10°$; $\delta_a = \delta_r = 0°$; $C_x' = .5811$, $\beta = 15°$



HOVERING FLIGHT, BODY AXES

ELEVATOR EFFECTIVENESS, FREE AIR, $\theta_q = -10°$

C_z' & C_m' vs $V_z/V_{s\infty}$

[redacted]

Test 96

CVAL TEST 96
MODEL XFY-1

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 100
REPORT CVAL 96
FIG. 49b

Plot 4b

176 ◺
171 ⊙
172 △
175 ⊡
179 ◊

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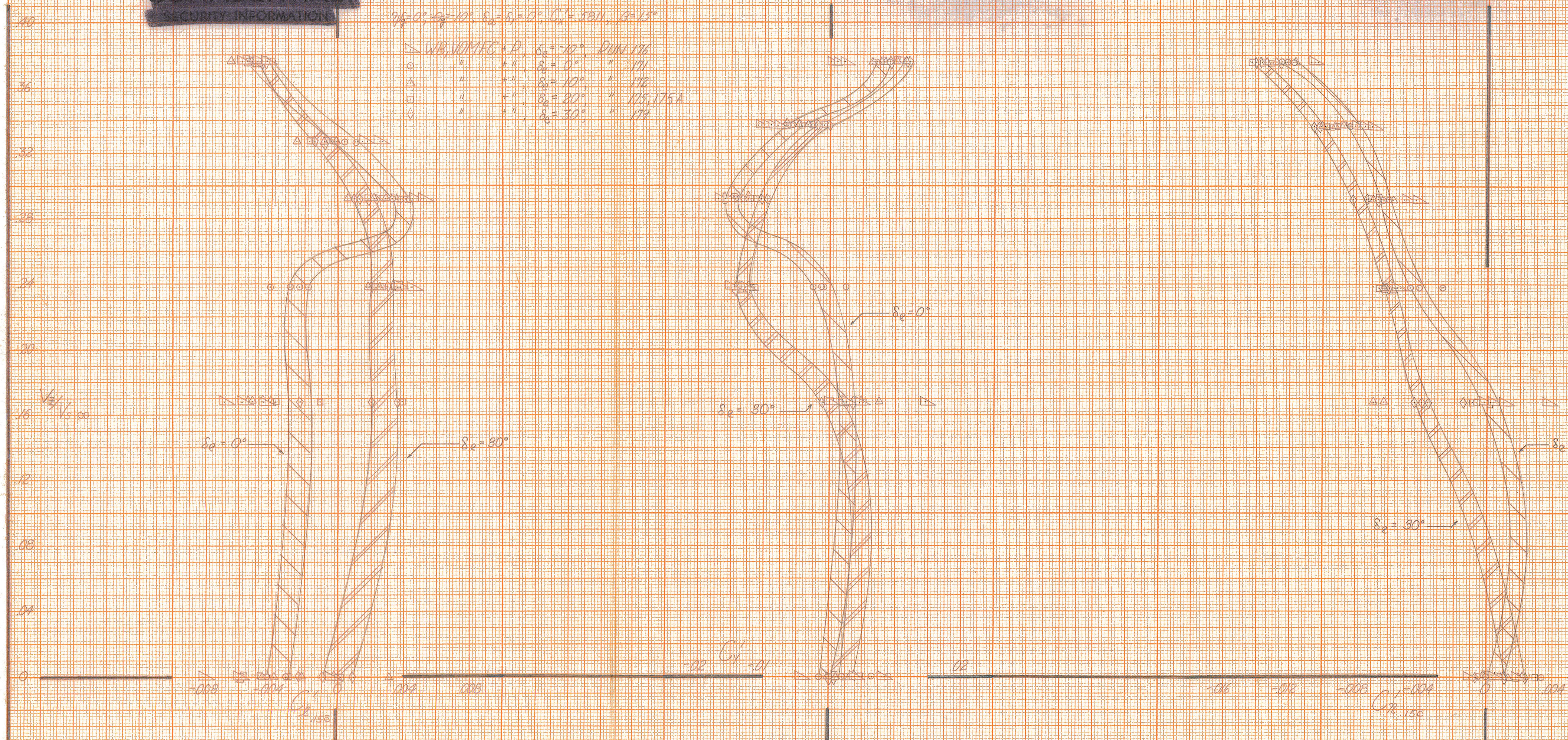

HOVERING FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, FREE AIR, $\theta_g = -10°$
C_ℓ', C_Y', C_n' vs V_z/V_{S_∞}

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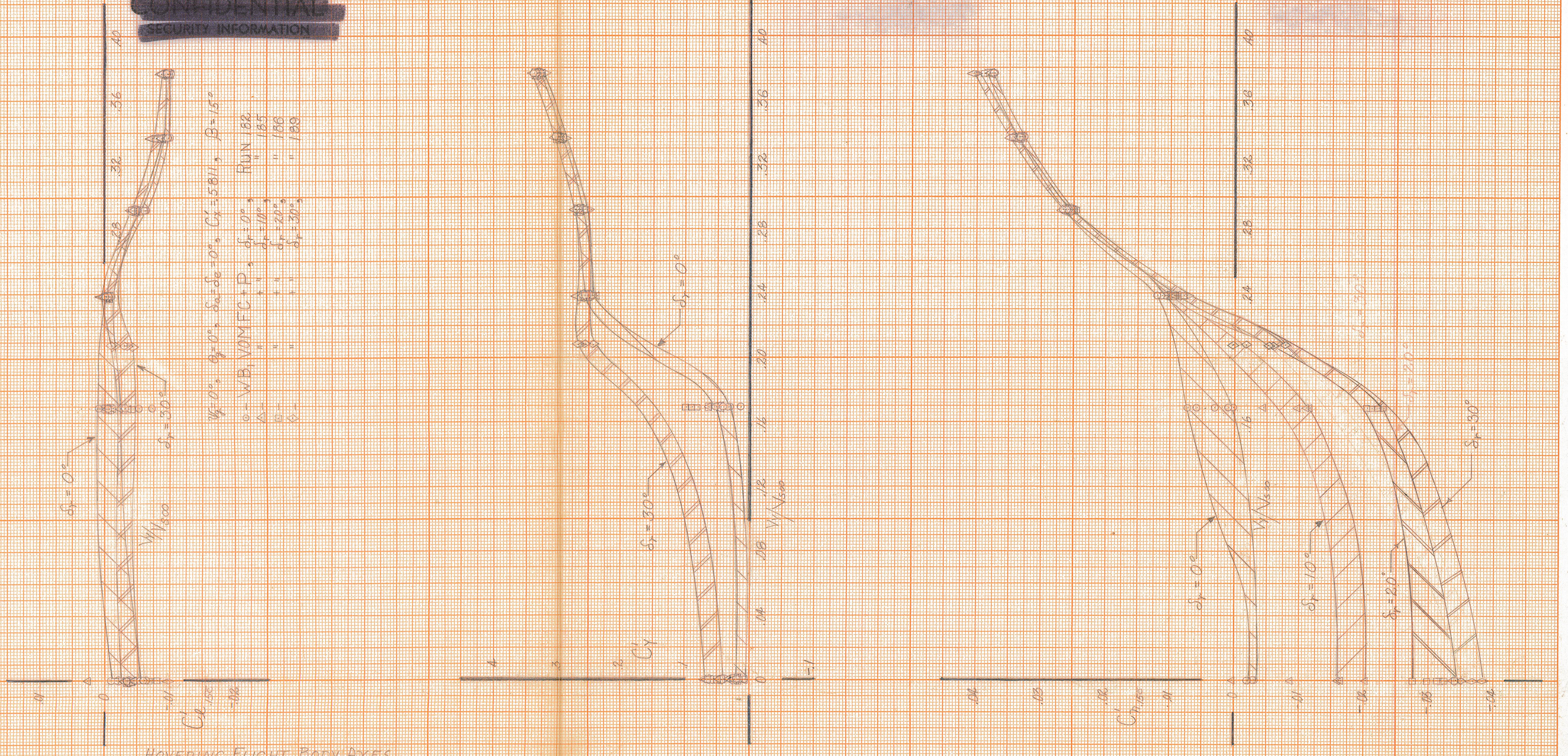
[redacted]

PLOT 76
182 ○
185 △
186 ⊡
189 ◇



HOVERING FLIGHT, BODY AXES
RUDDER EFFECTIVENESS, FREE AIR, $\psi_f = 0°$
C'_l, C'_Y & C'_n vs V_Y/V_{S00}

[redacted]

CVAL TEST 96
MODEL XFY-1

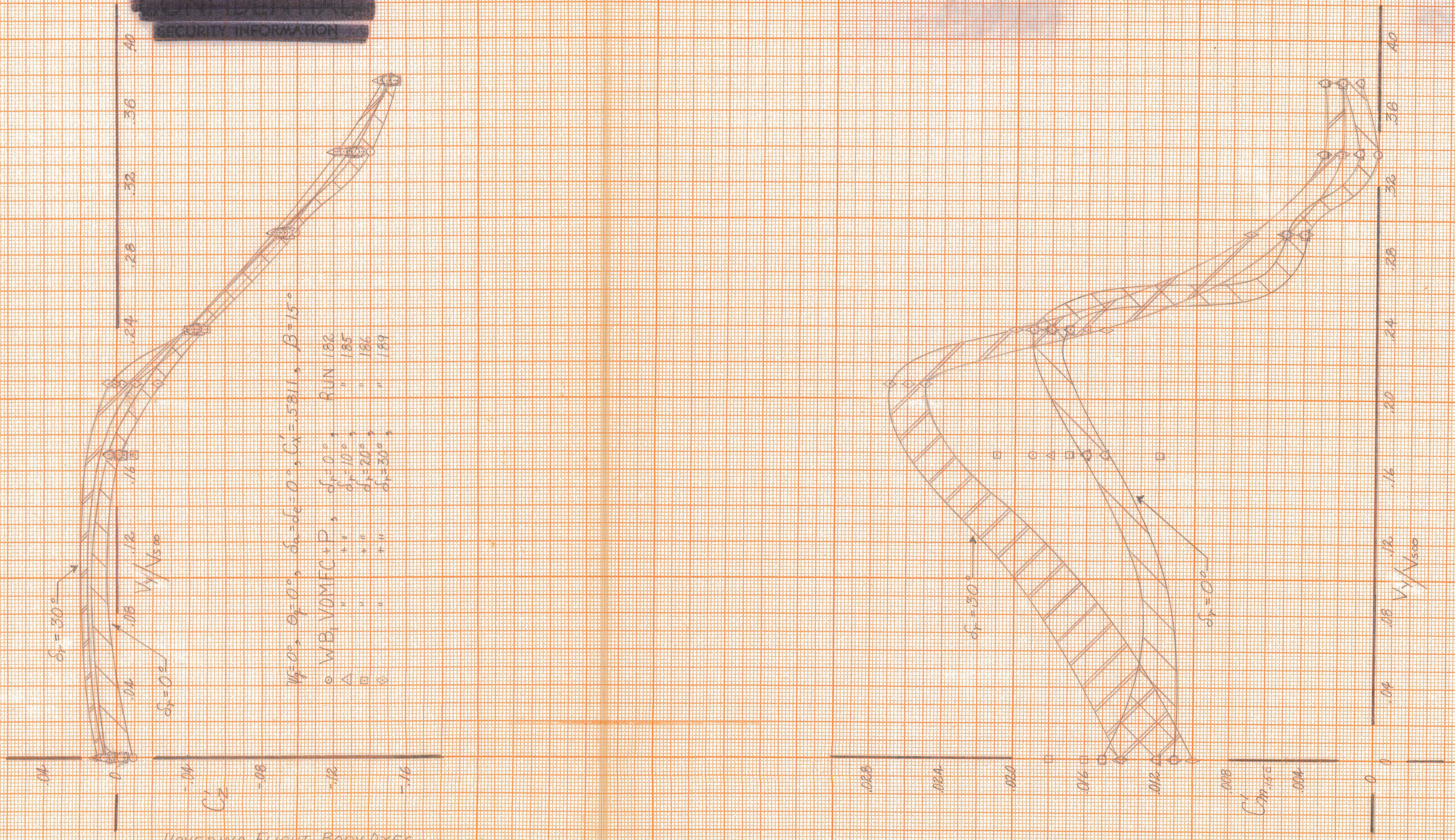
CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 102
REPORT CVAL
FIG. 50b

PLOT 7a

182 ○
185 △
186 ⊡
189 ◇

[redacted]



HOVERING FLIGHT, BODY AXES
RUDDER EFFECTIVENESS, FREE AIR, $\psi_f = 0°$
C'_Z & C'_m vs $V_Y/V_{S\infty}$

[redacted]

CVAL TEST 96
MODEL XFY-1

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SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 103
REPORT CVAL 96
FIG. 51a

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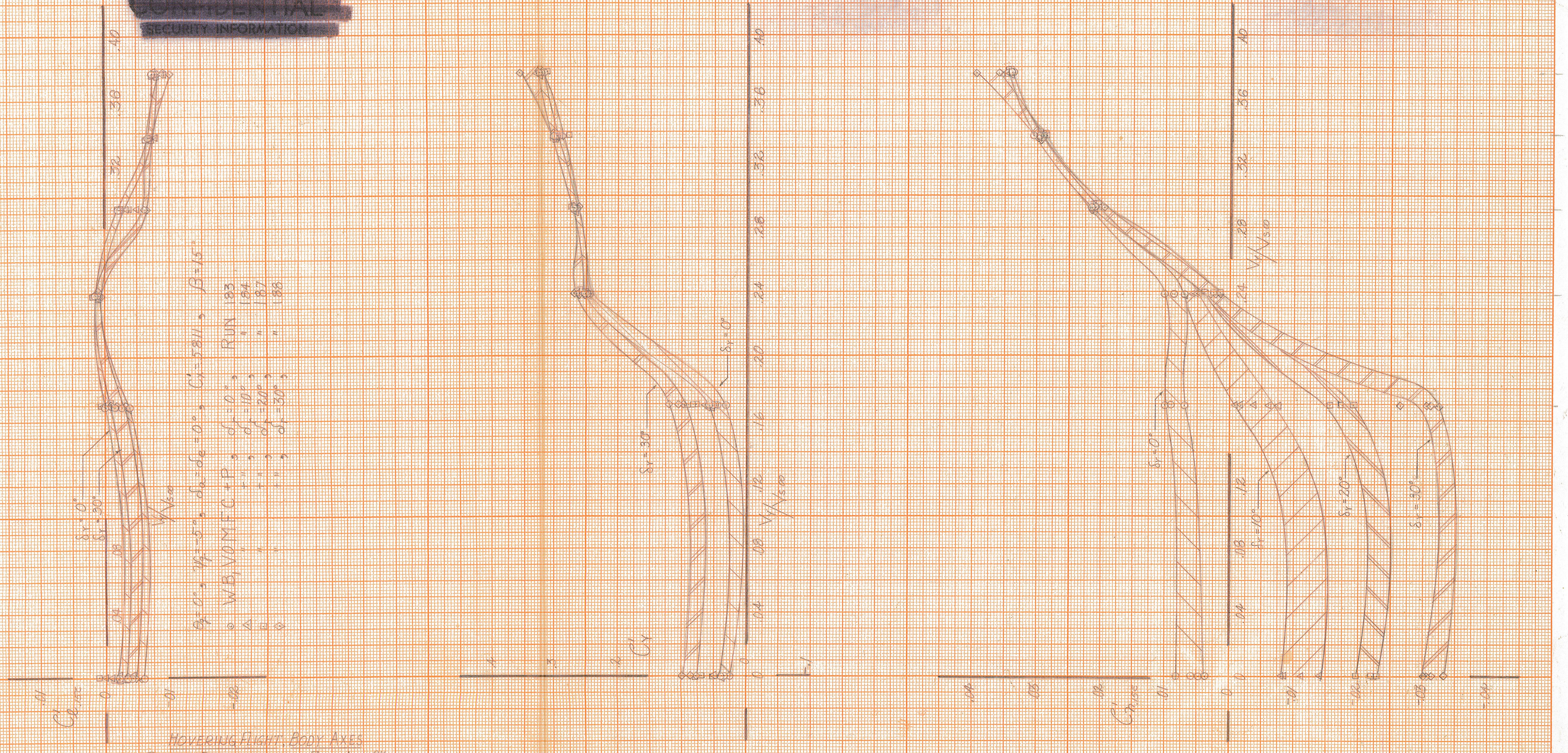
PLOT 8b
183 ○
184 △
187 ☐
188 ◇



HOVERING FLIGHT, BODY AXES
RUDDER EFFECTIVENESS, FREE AIR, $\psi_F = -5°$
C_l', C_Y', C_n' vs $V_Y/V_{S\infty}$

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CVAL TEST 96
MODEL XFY-1

CONSOLIDATED VULTEE AIRCRAFT CORPORATION
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

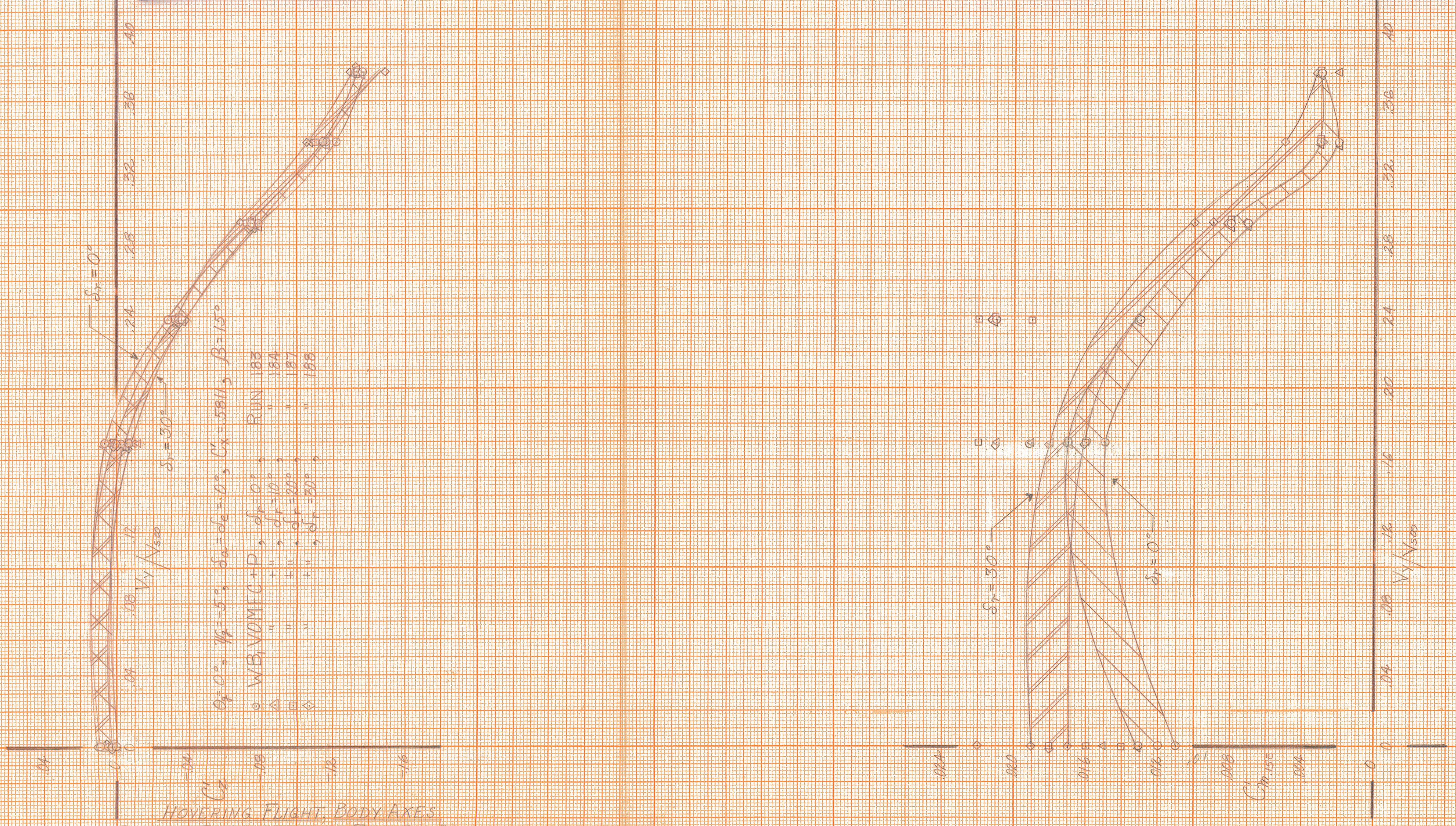
PAGE 104
REPORT CVAL 96
FIG. 51b

[redacted]

Test 96

Plotted

183 ⊙
184 △
187 ⊡
188 ◇



HOVERING FLIGHT, BODY AXES
RUDDER EFFECTIVENESS, FREE AIR, $\psi_g = -5°$
C'_Z & C'_m vs. V_Y/V_{S00}

[redacted]
SECURITY INFORMATION

96
Plot 43b
⊙ - 170
△ - 173
⊡ - 180
◇ - 181

CVAL TEST 96
MODEL XFY-1

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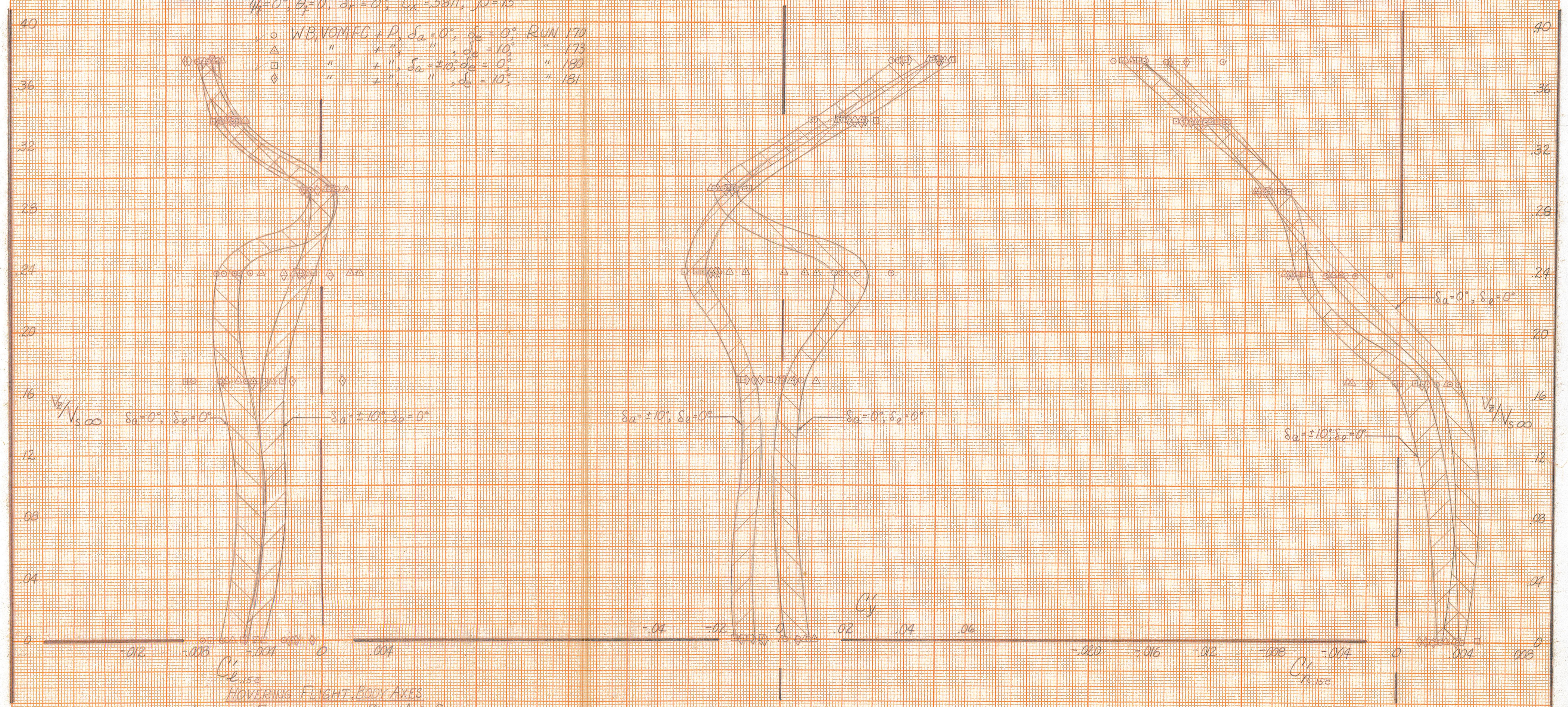
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

FIG. 52a

gm

[redacted]

$\psi_f = 0°;\ \theta_f = 0°;\ \delta_r = 0°;\ C'_x = .5811,\ \beta = 15°$



HOVERING FLIGHT, BODY AXES

AILERON EFFECTIVENESS, FREE AIR, $\theta_g = 0°$

$C'_l,\ C'_y,\ C'_n$ vs $V_z/V_{s\infty}$

[redacted]

96
PLOT 43a

⊙ – 170
△ – 173
⊡ – 180
◇ – 181

CVAL TEST 96
MODEL XFY-1

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SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

REPORT CVAL 96
FIG. 52b

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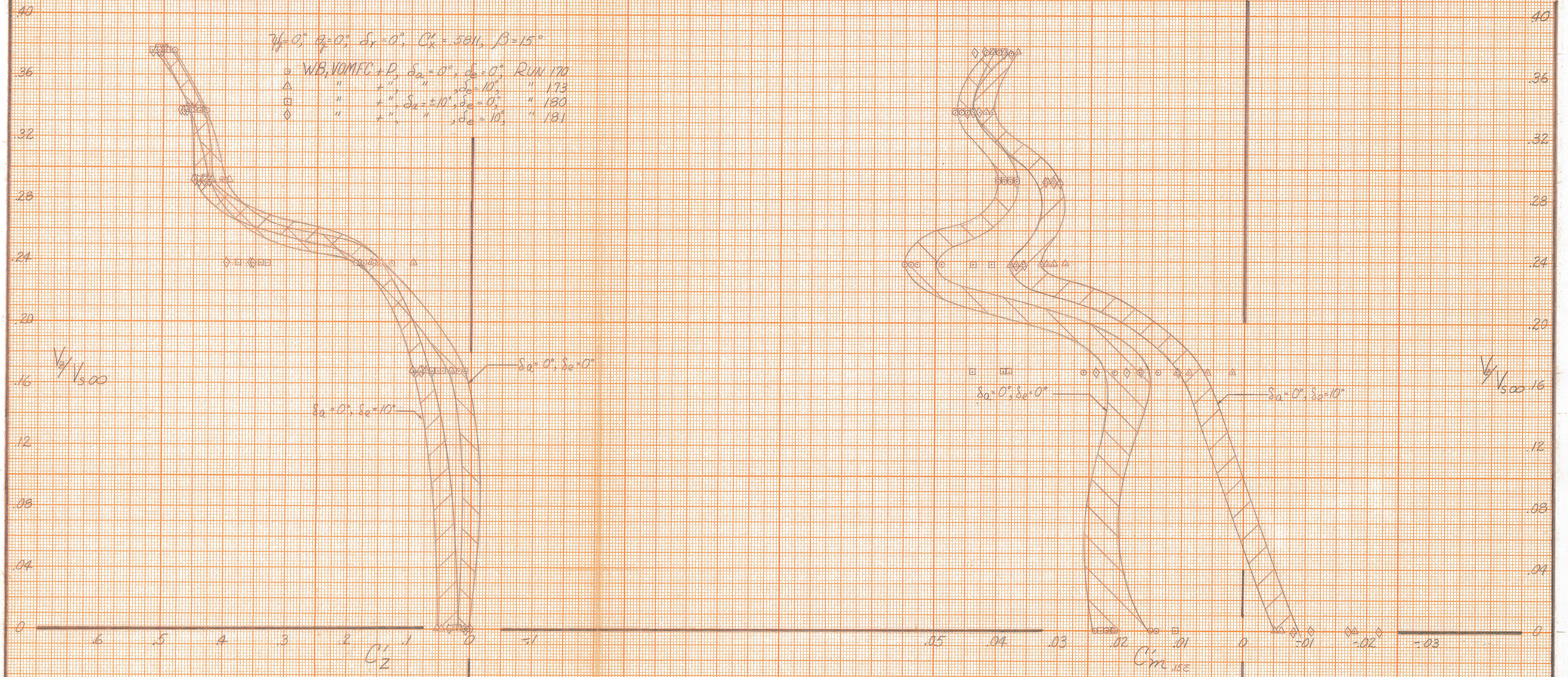

HOVERING FLIGHT, BODY AXES
AILERON EFFECTIVENESS, FREE AIR, $\theta_z = 0°$
C'_z, C'_m vs $V_z/V_{s\infty}$

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CVAL TEST 96
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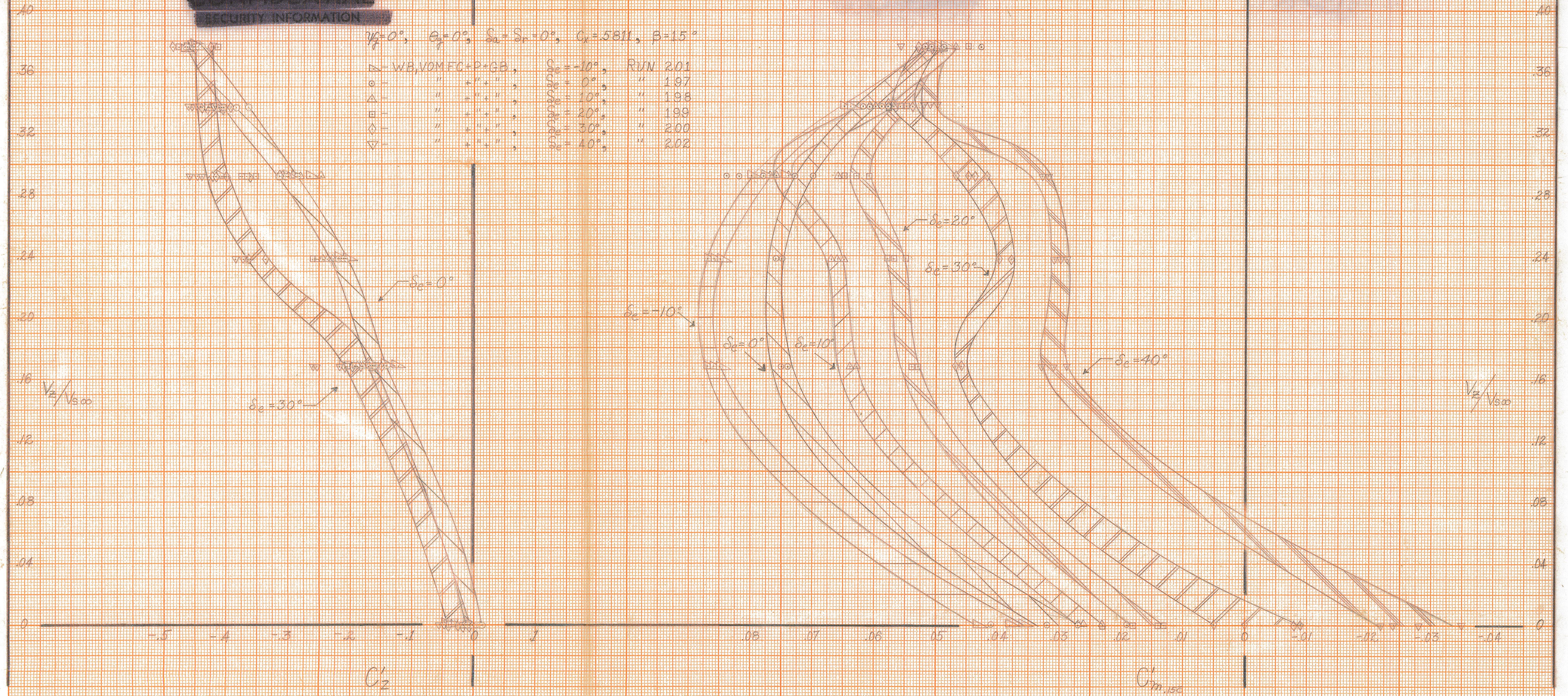
SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

[redacted]

PAGE 107
REPORT CVAL 96
FIG. 53a

Test 96
Plot 1a

- ▷ 201
- ⊙ 197
- △ 198
- ⊡ 199
- ◇ 200
- ▽ 202



HOVERING FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, $\theta_g = 0°$
2 FT. FULL SCALE ABOVE GROUND
C'_z & C'_m vs. $V_z / V_{s\infty}$

[redacted]

TEST 96

PLOT 10

CVAL TEST 96
MODEL XFY-1

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SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

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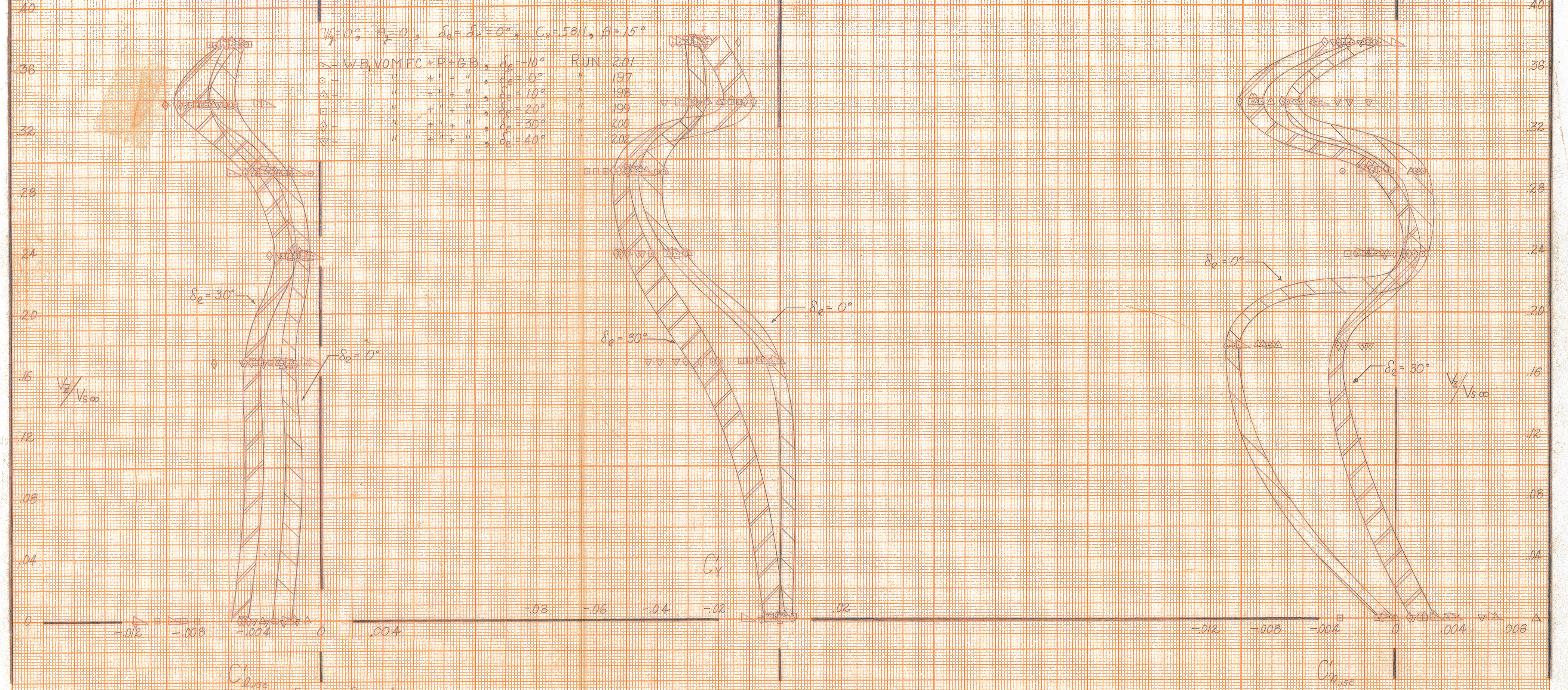
PAGE 108
REPORT CVAL 96
FIG. 53b



HOVERING FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, $\theta_g = 0°$
2 FT. FULL SCALE ABOVE GROUND
C'_l, C'_Y, C'_n vs $V_z/V_{s\infty}$

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TEST 96
PLOT 2a
⊙ 205
△ 206A
⊡ 207
◊ 208A
▽ 209

CVAL TEST 96
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PAGE 109
REPORT CVAL 96
FIG. 54a

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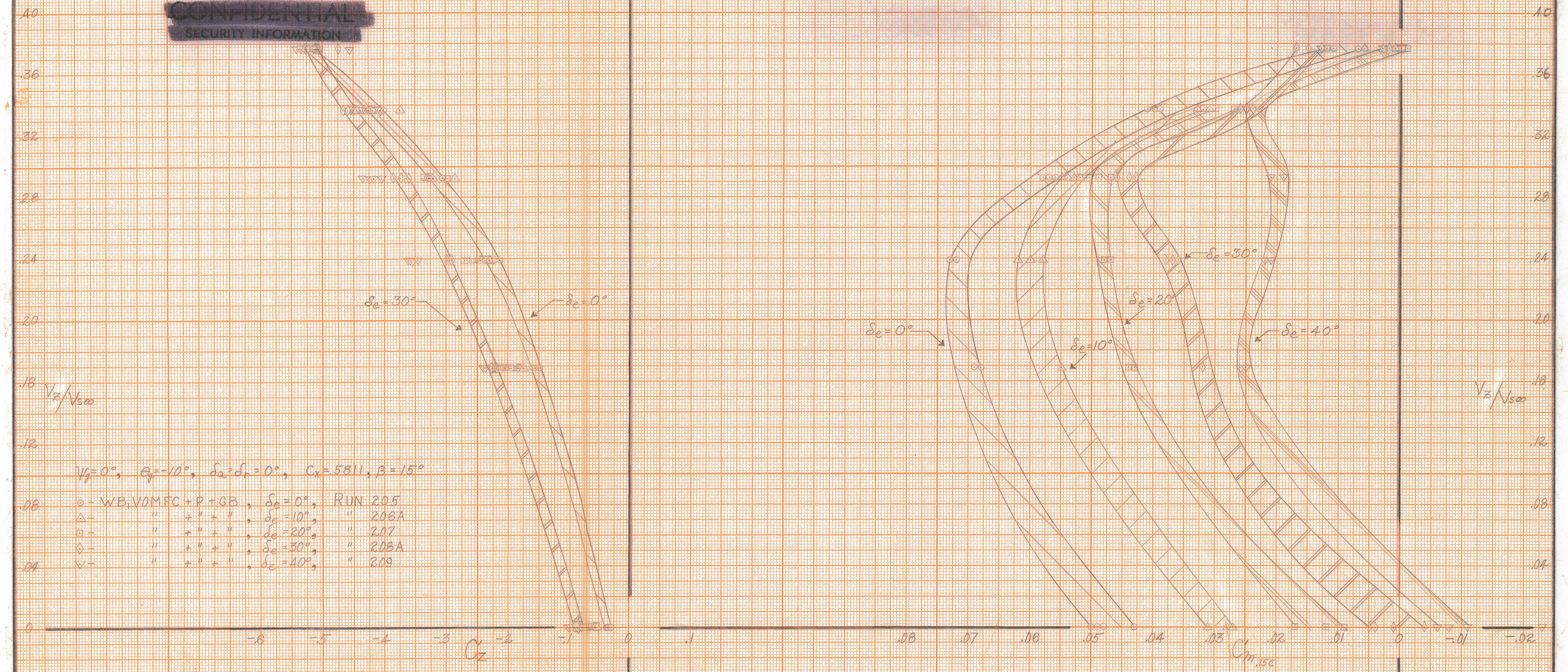

$\psi_g = 0°$, $\theta_g = -10°$, $\delta_a = \delta_r = 0°$, $C_x = .5811$, $\beta = 15°$

⊙ – WB, VOMFC + P + GB, $\delta_e = 0°$, RUN 205
△ – " + " + ", $\delta_e = 10°$, " 206A
⊡ – " + " + ", $\delta_e = 20°$, " 207
◊ – " + " + ", $\delta_e = 30°$, " 208A
▽ – " + " + ", $\delta_e = 40°$, " 209

HOVERING FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, $\theta_g = -10°$
2 FT. FULL SCALE ABOVE GROUND
C_z' & C_m' vs $V_z/V_{s\infty}$

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TEST 96
PLOT 2b

○ 205
△ 206 A
□ 207
◇ 208 A
▽ 209

CVAL TEST 96
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PAGE 110
REPORT CVAL 96
FIG. 54b

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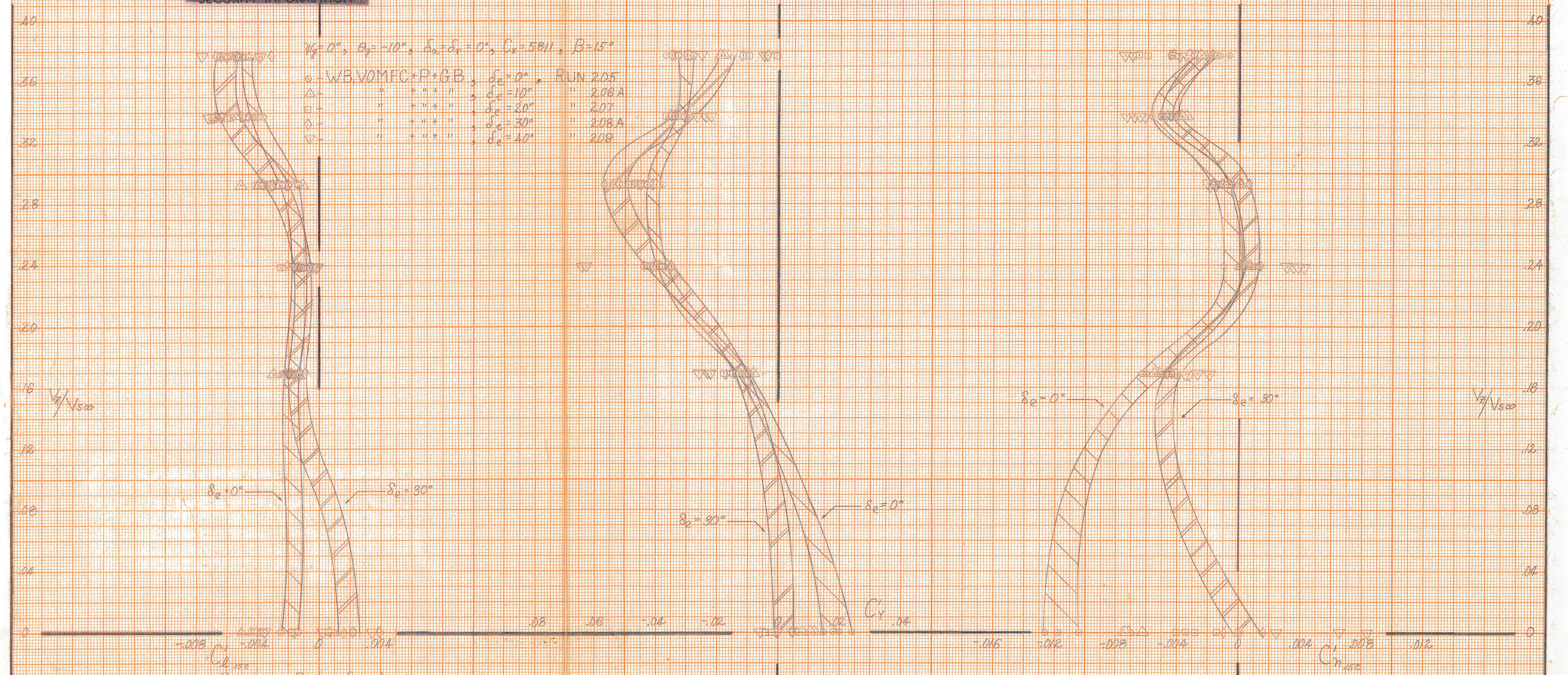

HOVERING FLIGHT, BODY AXES
ELEVATOR EFFECTIVENESS, $\theta_g = -10°$
2 FT. FULL SCALE ABOVE GROUND
C'_l, C'_Y, C'_n VS $V_z/V_{s\infty}$

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PLOT 56

.4

192 ○
193 △
194 ☐
195 ◇

CVAL TEST 96
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PAGE 111
REPORT CVAL 96
FIG. 55a

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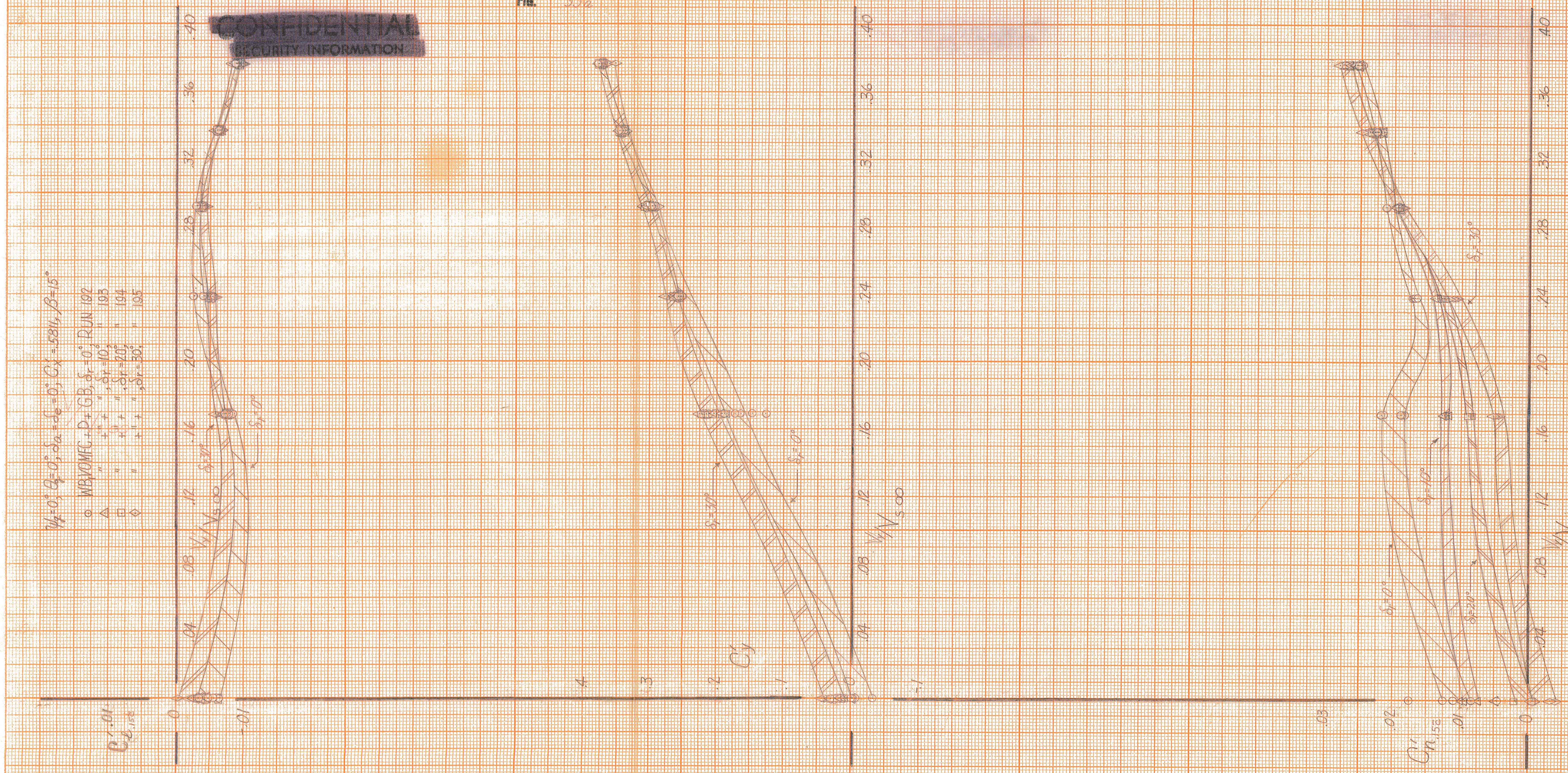

HOVERING FLIGHT, BODY AXES
RUDDER EFFECTIVENESS, $\psi_g = 0°$
2 FT. FULL SCALE ABOVE GROUND
C'_ℓ, C'_y, C'_n vs $V_1/V_{s\infty}$

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CVAL TEST 96
MODEL XFY-1

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SAN DIEGO DIVISION   SAN DIEGO, CALIFORNIA

PAGE 112
REPORT CVAL 96
FIG. 55b

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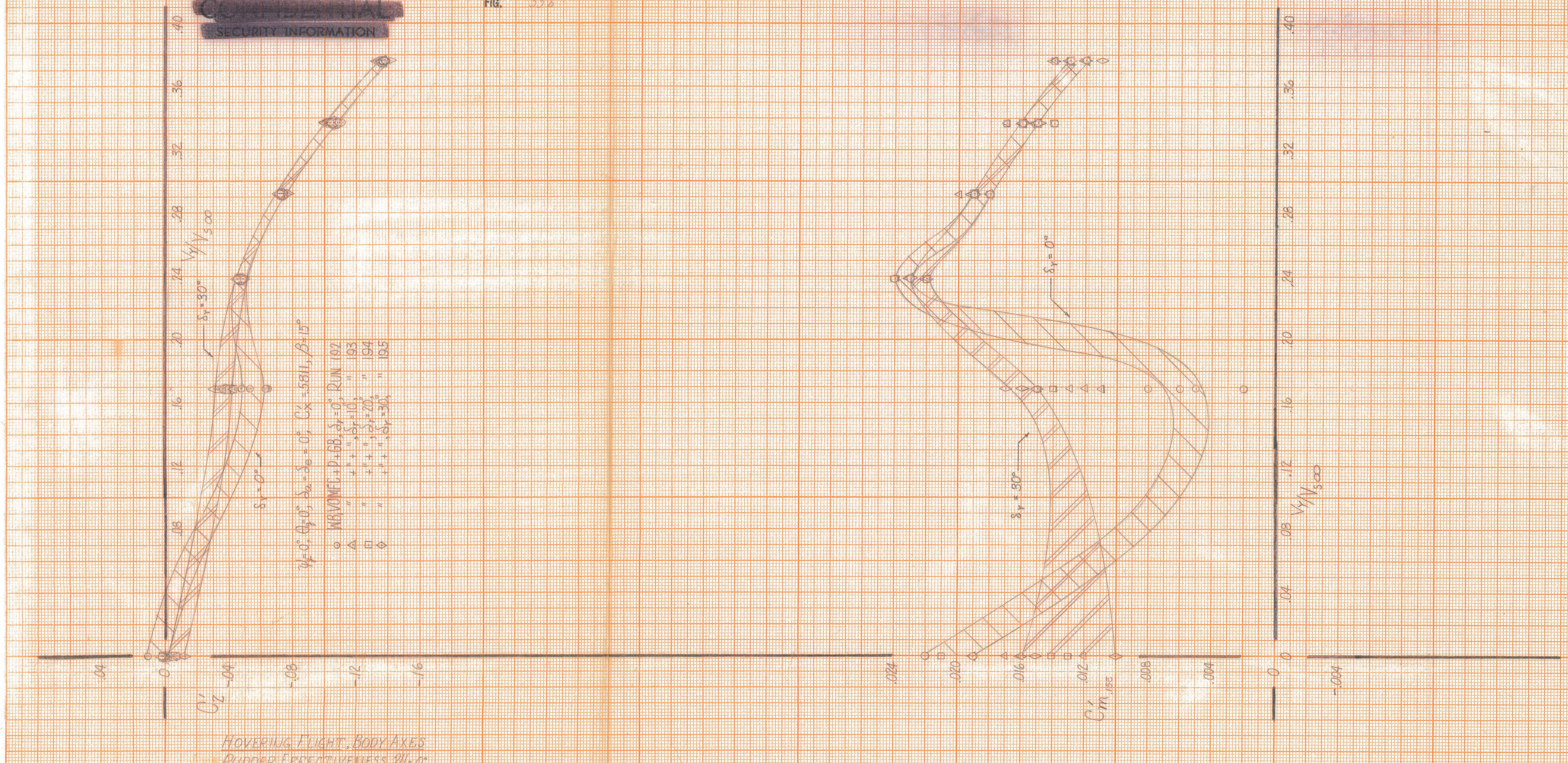
PLOT
EN
192 ⊙
193 △
194 ⊡
195 ◇



HOVERING FLIGHT, BODY AXES
RUDDER EFFECTIVENESS, $\psi_g = 0°$
2 FT. FULL SCALE ABOVE GROUND
C'_Z, C'_m vs $V_Y/V_{S\infty}$

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PAGE 113
REPORT CVAL 96
FIG. 56a

PLOT 6b

213 ⊙
212 △
211 ⊡
210 ◇

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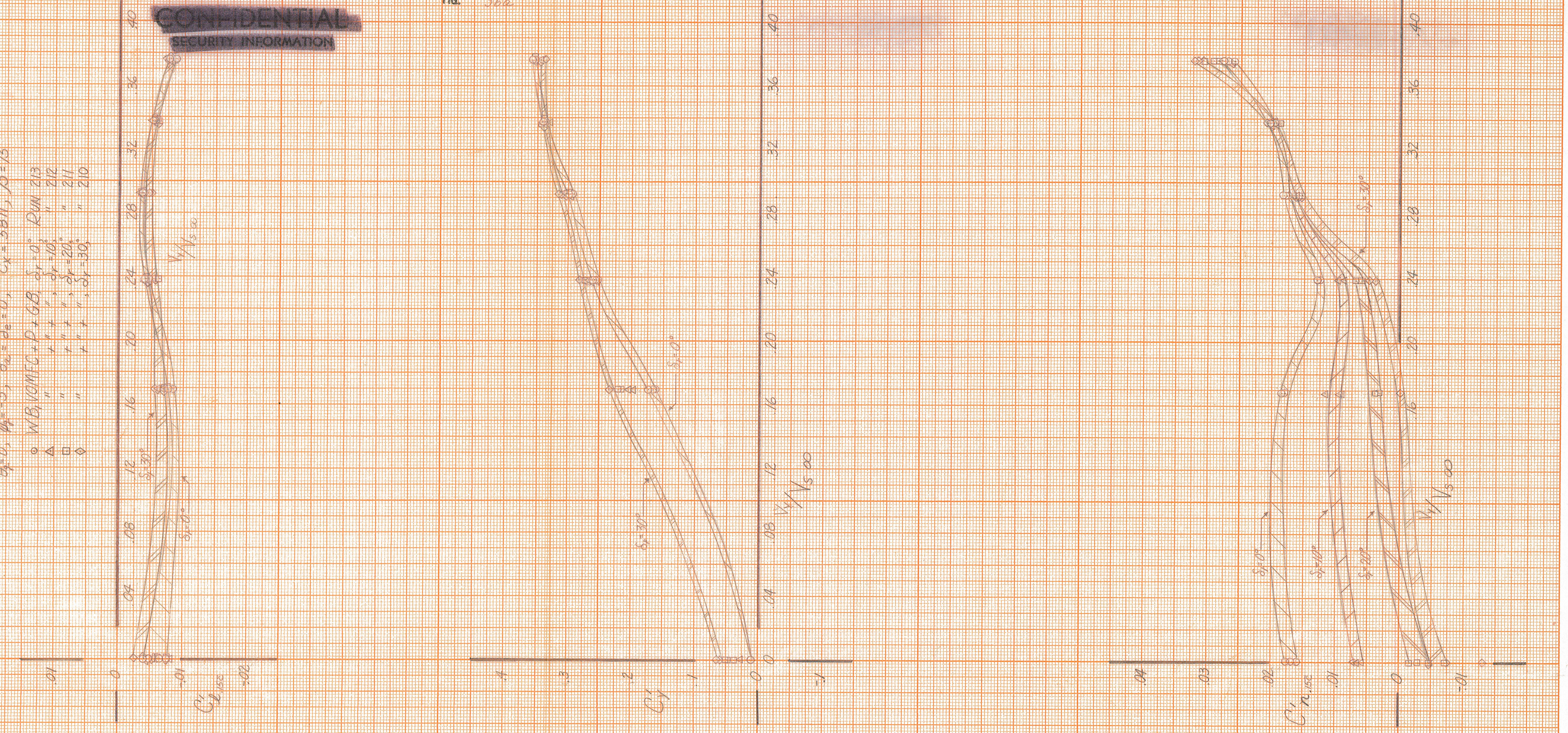

HOVERING FLIGHT, BODY AXES
RUDDER EFFECTIVENESS, $\psi_g = -5$
2 FT. FULL SCALE ABOVE GROUND
C'_l, C'_y, C'_n vs $V_y/V_{s\infty}$

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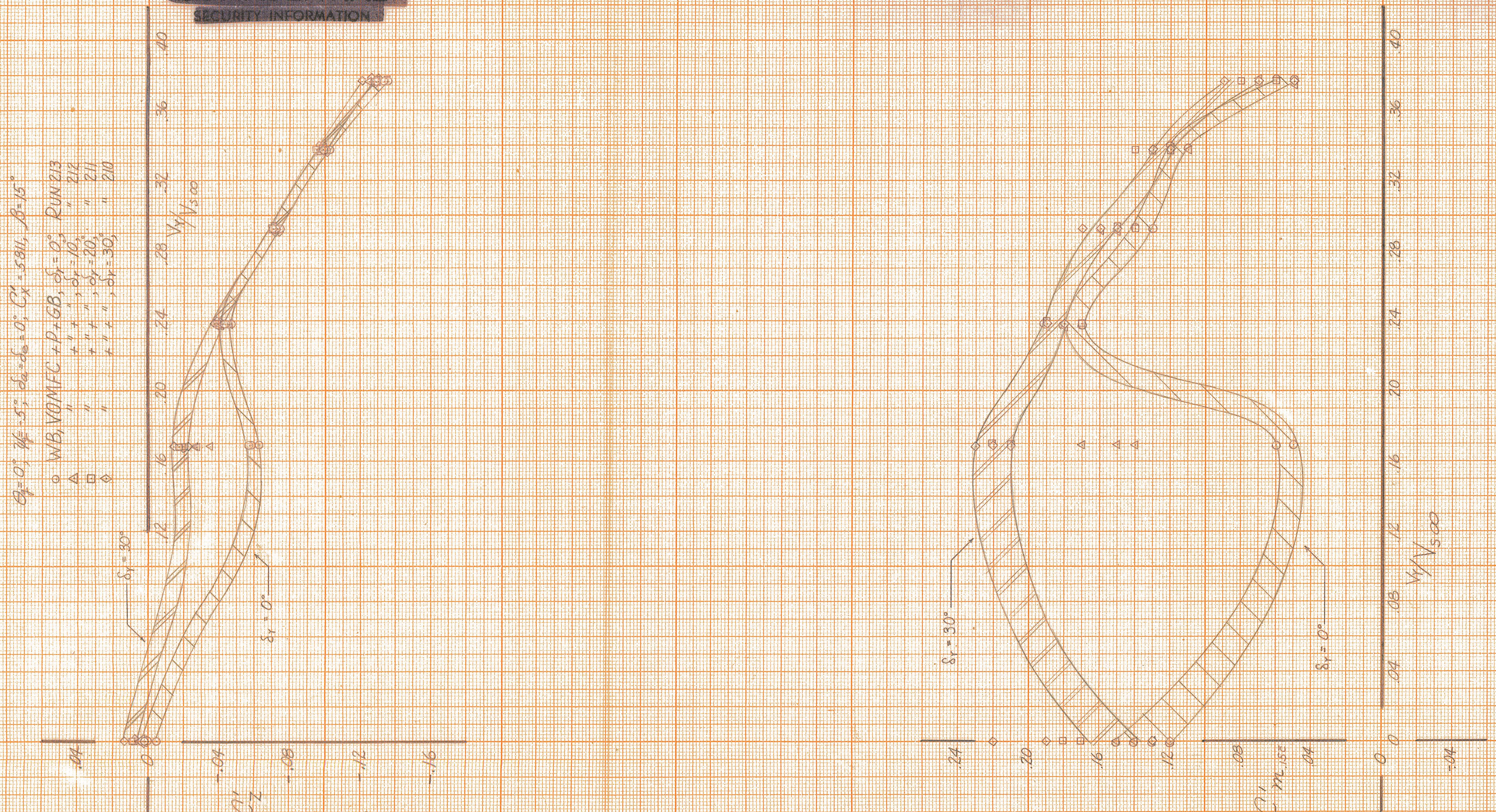
~~SECURITY INFORMATION~~

Plot 6a

RUN
213 ⊙
212 △
211 □
210 ◇



HOVERING FLIGHT, BODY AXES
RUDDER EFFECTIVENESS, $\psi_g = -5°$
2 FT. FULL SCALE ABOVE GROUND
C'_z, C'_m vs V_t/V_{S00}

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CVAL TEST 96
MODEL XFY-1

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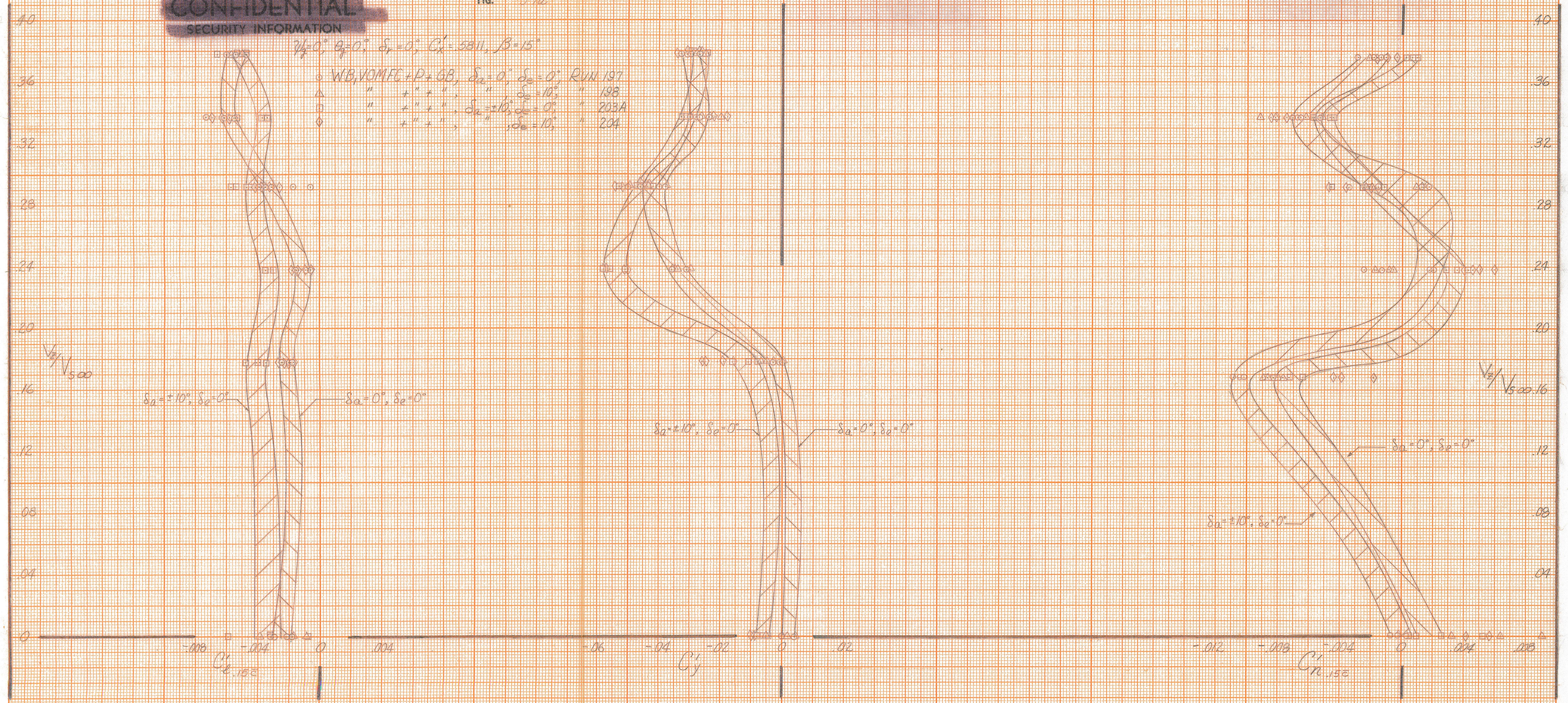
PAGE 115
REPORT CVAL 96
FIG. 57a

CONFIDENTIAL
SECURITY INFORMATION

96
PLOT 42b
⊙ - 197
△ - 198
⊡ - 203A
◇ - 204

$\psi_g = 0°,\ \theta_g = 0°,\ \delta_r = 0°,\ C_x' = .5811,\ \beta = 15°$

⊙ WB, VOMFC + P + GB, $\delta_a = 0°$, $\delta_e = 0°$, RUN 197
△ " + " + ", " , $\delta_e = 10°$, " 198
□ " + " + ", $\delta_a = \pm 10°$, $\delta_e = 0°$, " 203A
◇ " + " + ", " , $\delta_e = 10°$, " 204



HOVERING FLIGHT, BODY AXES
AILERON EFFECTIVENESS, $\theta_g = 0°$
2 FT. FULL SCALE ABOVE GROUND
$C'_\ell,\ C'_Y,\ C'_n$ vs $V_z/V_{S\infty}$

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96
PLOT 42A
○ – 197
△ – 198
□ – 203A
◇ – 204

CVAL TEST 96
MODEL XFY-1

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SAN DIEGO DIVISION SAN DIEGO, CALIFORNIA

PAGE 116
REPORT CVAL 96
FIG. 57b

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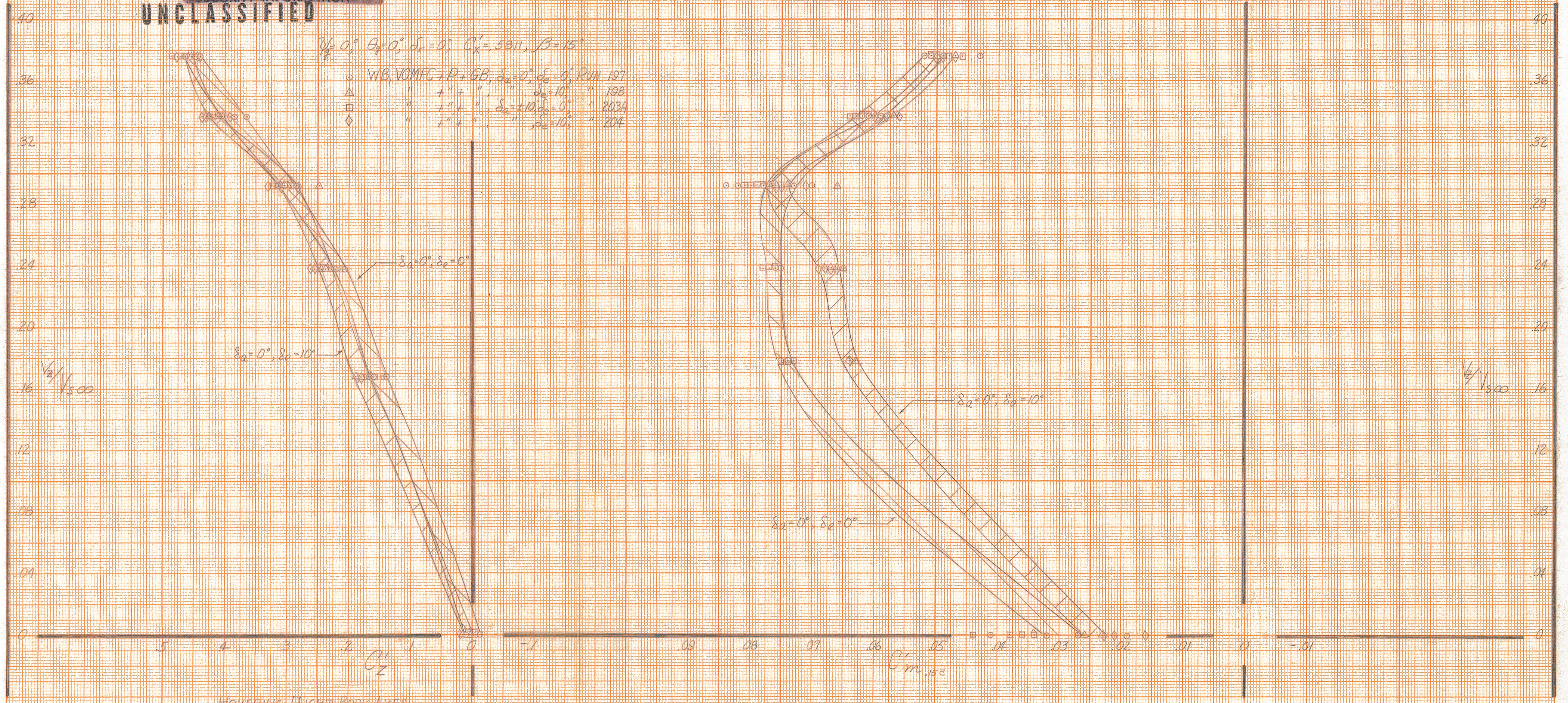

HOVERING FLIGHT, BODY AXES
AILERON EFFECTIVENESS, $\theta_g = 0°$
2 FT. FULL SCALE ABOVE GROUND
C_z', C_m' vs $V_z / V_{S\infty}$

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